United States Department of the Interior
Bureau of Land Management

Las Cruces Field Office

Final

Environmental Impact Statement for Riparian and Aquatic Habitat Management in the Las Cruces Field Office – New Mexico Volume 2: Proposed Riparian and Aquatic Habitat Management Plan

August 2000

BLM/NM/PL-00-011-1040

Mission Statement

It is the mission of the U.S. Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NM/PL-00-011-1040

ABSTRACT

This U.S. Bureau of Land Management (BLM) Las Cruces Field Office Riparian and Aquatic Habitat Management Plan (HMP) presents a management strategy for restoring and protecting riparian areas administered by the Las Cruces Field Office. Riparian habitats are critical, but very small, areas in relation to the large amount of land administered by the BLM. Riparian areas under BLM jurisdiction are often only small segments of a larger area over which the BLM has no management responsibility or authority. The BLM plays an important, but limited, role in improving and protecting riparian habitats in New Mexico.

This HMP presents a sequence of tasks for individual riparian areas that, when implemented, will provide a systematic method of achieving proper functioning condition and long-term stewardship of threatened and endangered species habitat.

Although the BLM has been implementing restoration and protective actions for selected riparian areas in New Mexico for over a decade, development of measurable goals and endpoints for restoration activities has not been undertaken because of informational and planning needs. For example, additional scientific data for riparian habitats will be obtained and utilized, and proactive strategies for accomplishing riparian-wetland management objectives will be developed and implemented on the basis of the HMP. The HMP assigns highest priority to implementing those management practices identified in current BLM management guidance as restoring and protecting all riparian habitats under BLM jurisdiction. For riparian areas, the HMP requires a specific focus on riparian management; decisions regarding other land management activities will be constrained to limit or prevent any adverse impact on riparian areas.

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ABBREVIATIONS/ACRONYMS

ACEC	area of critical environmental concern
AMP	allotment management plan
AUM	animal unit month
BLM	U.S. Bureau of Land Management
CMP	coordinated management plan
CRMP	coordinated resource management plan
DEIS	draft environmental impact statement
EIS	environmental impact statement
FAR	functional – at risk
FEIS	final environmental impact statement
HMP	habitat management plan
MOU	memorandum of understanding
MSL	mean sea level
NF	nonfunctional
NMDG&F	New Mexico Department of Game and Fish
OHV	off-highway vehicle
PFC	proper functioning condition
RMP	resource management plan
RNA	research natural area
TR	technical reference
USFWS	U.S. Fish and Wildlife Service
VRM	visual resource management
WSA	wilderness study area

1 INTRODUCTION

1.1 REASONS FOR PREPARATION

The purpose of this Habitat Management Plan (HMP) is to provide guidance for the restoration and protection of riparian habitats in a four-county (Grant, Hidalgo, Luna, and Doña Ana) area under the Las Cruces Field Office jurisdiction in New Mexico. The goal of riparian-wetland area management is to maintain, restore, improve, protect, and expand these areas so that they are in proper functioning condition for their productivity, biological diversity, and sustainability. This goal will be accomplished when all designated riparian areas are in proper functioning condition and all threatened and endangered species' habitat requirements have been completed.

Although the U.S. Bureau of Land Management (BLM) has been actively managing riparian habitats in pursuit of this goal for over a decade, the need to place special emphasis on these important resources was triggered by legal action against the BLM. The lawsuit was settled when the BLM agreed to complete an Environmental Impact Statement (EIS) for Riparian and Aquatic Habitat Management in the Las Cruces Field Office, including this HMP. In addition, the management strategies provided in this HMP will be applicable to subsequently identified riparian, wetland, and spring/seep areas under BLM jurisdiction in the Las Cruces Field Office.

Riparian habitats constitute a small, but critical percentage of lands administered by the BLM in New Mexico. Figures 1.1 through 1.4 illustrate the riparian habitats under BLM jurisdiction in the context of the total surface lands contained within, and administered by, the Las Cruces Field Office. Figure 1.1 shows the location of the jurisdictional boundaries of the Las Cruces Field Office in relation to the rest of New Mexico; Figure 1.2 shows the distribution of riparian habitats under the jurisdiction of the BLM in the Las Cruces Field Office; Figure 1.3 shows the major physiographic features in the Las Cruces Field Office area; and Figure 1.4 shows the management jurisdiction of lands in the Las Cruces Field Office area.

The ecological focus of this HMP encompasses riparian areas, wetlands, and springs and seeps of the Las Cruces Field Office area.

1.2 ECOSYSTEM DESCRIPTIONS

1.2.1 Riparian Areas

The following text describes current conditions within designated riparian areas on public land managed by the Las Cruces Field Office (Figure 1.2). In addition, figures presented in the text show the relationship between specific riparian areas and grazing allotments.

The following descriptions of individual riparian areas are based primarily on surveys conducted to judge the health of these areas on the basis of function, capabilities, and relative potential, with the objective of maintaining or achieving a long-term, properly functioning condition. These surveys include information pertaining to hydrological conditions, the types and condition of vegetation, and characteristics of soil erosion and deposition within the riparian areas. At the conclusion of a survey, a determination is made about the functional rating for the riparian area. On the basis of the survey results, riparian areas are classified as Proper Functioning Condition (PFC), Functional – at Risk (FAR), or Nonfunctional (NF). These ratings are affected by the local geology, soils, water regime, vegetation, and, in

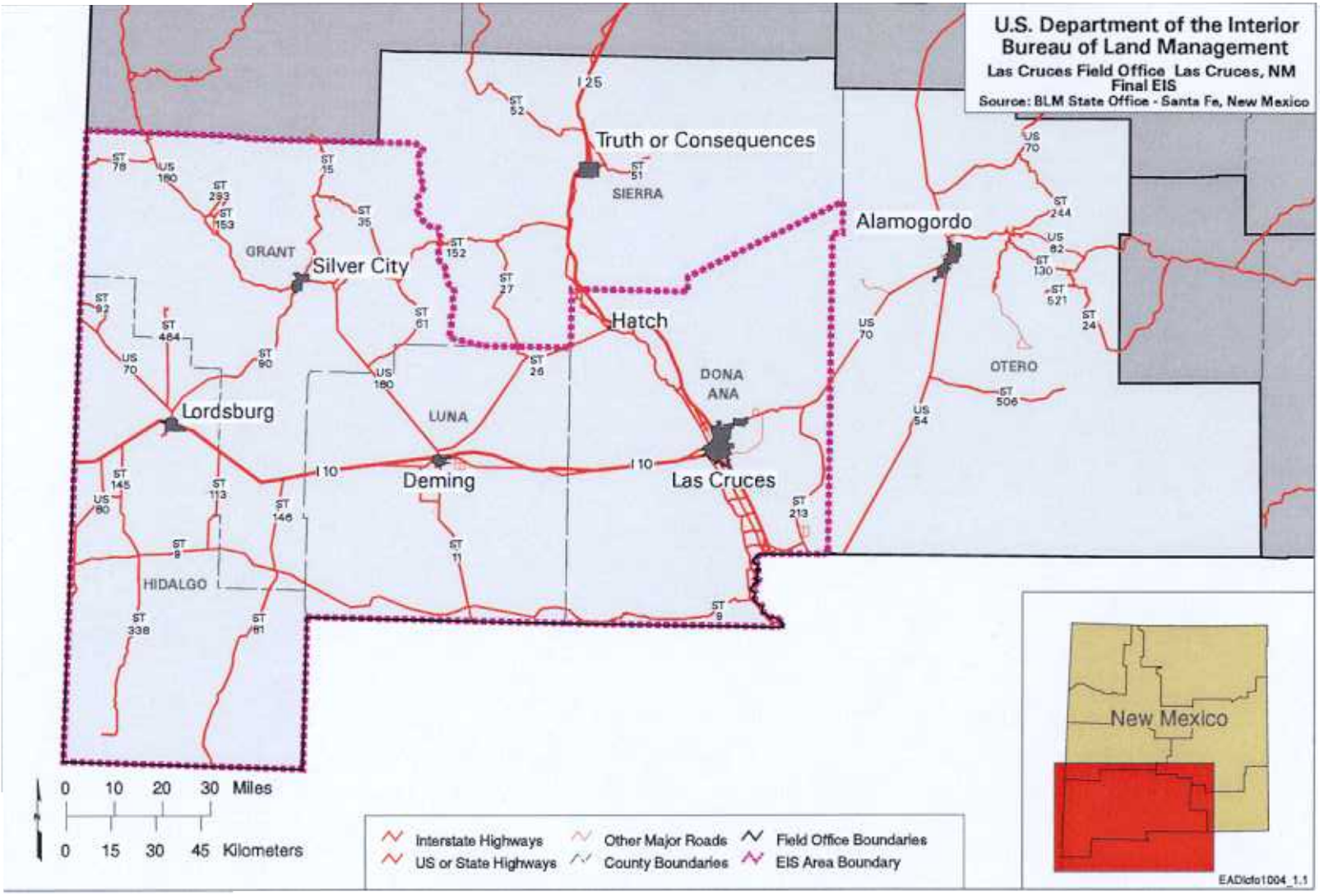

FIGURE 1.1 Counties, Communities, and Major Roads in the Las Cruces Field Office Area

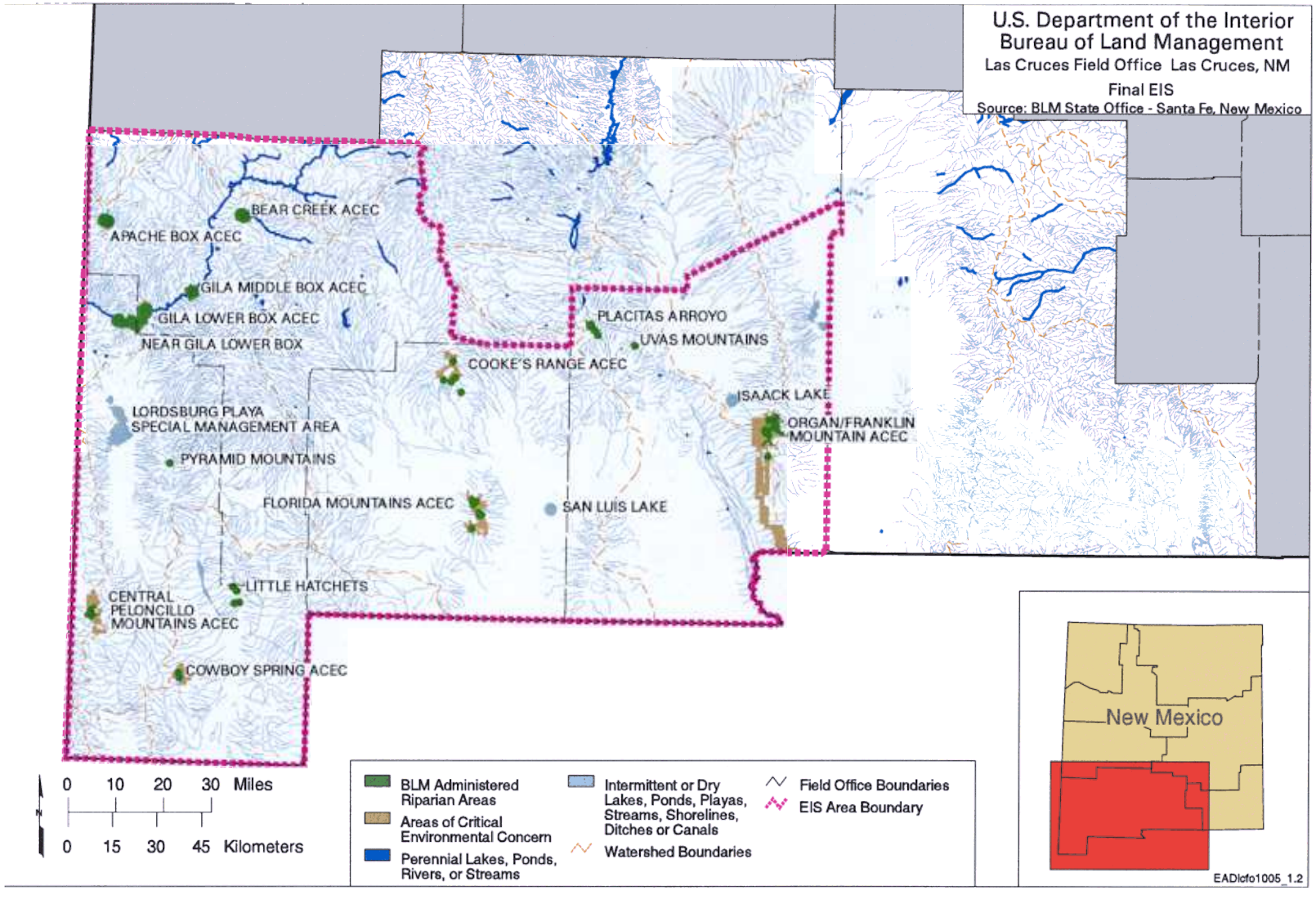

FIGURE 1.2 Riparian Areas in the HMP Area of the Las Cruces Field Office

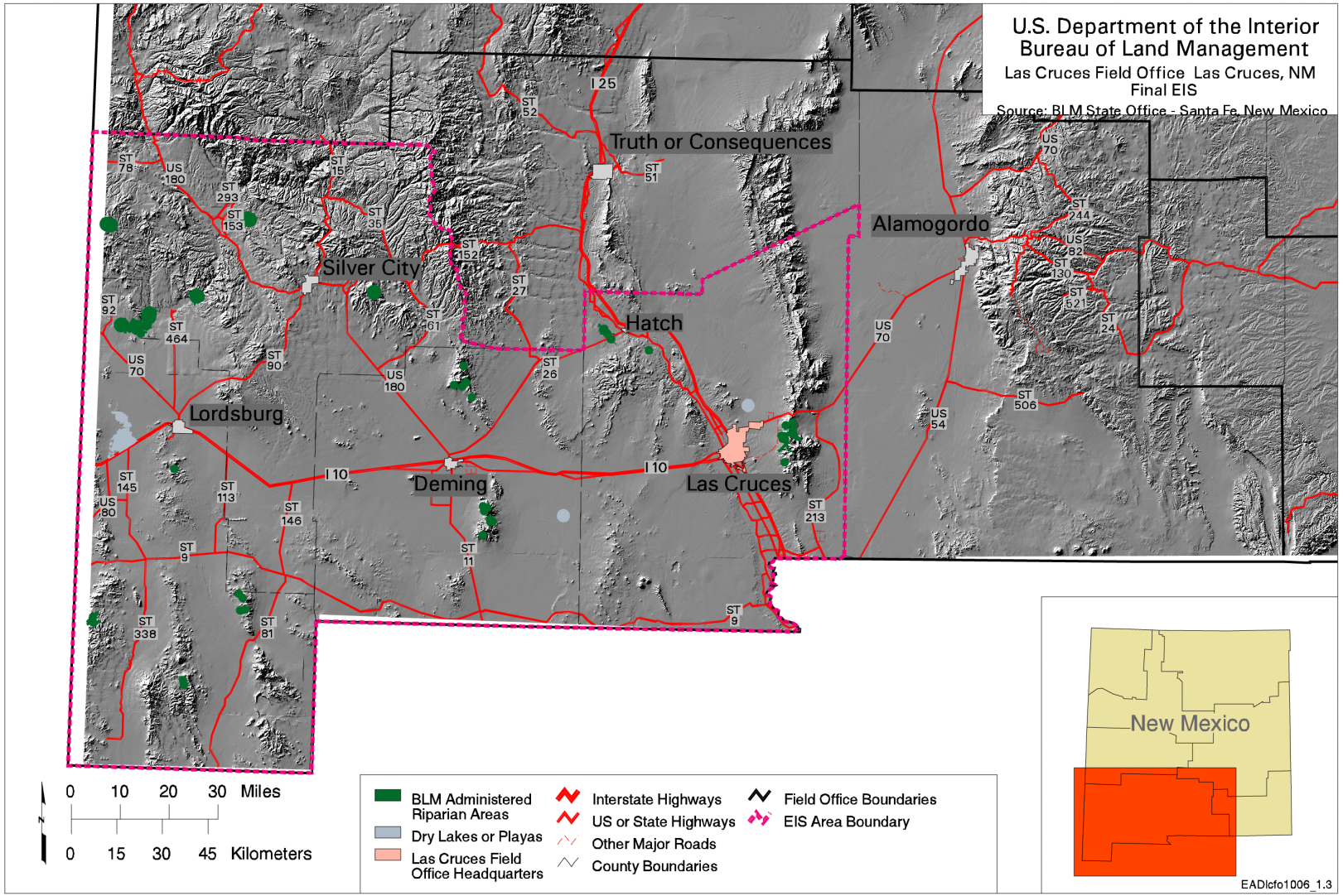

FIGURE 1.3 Major Physiographic Features in the Las Cruces Field Office Area

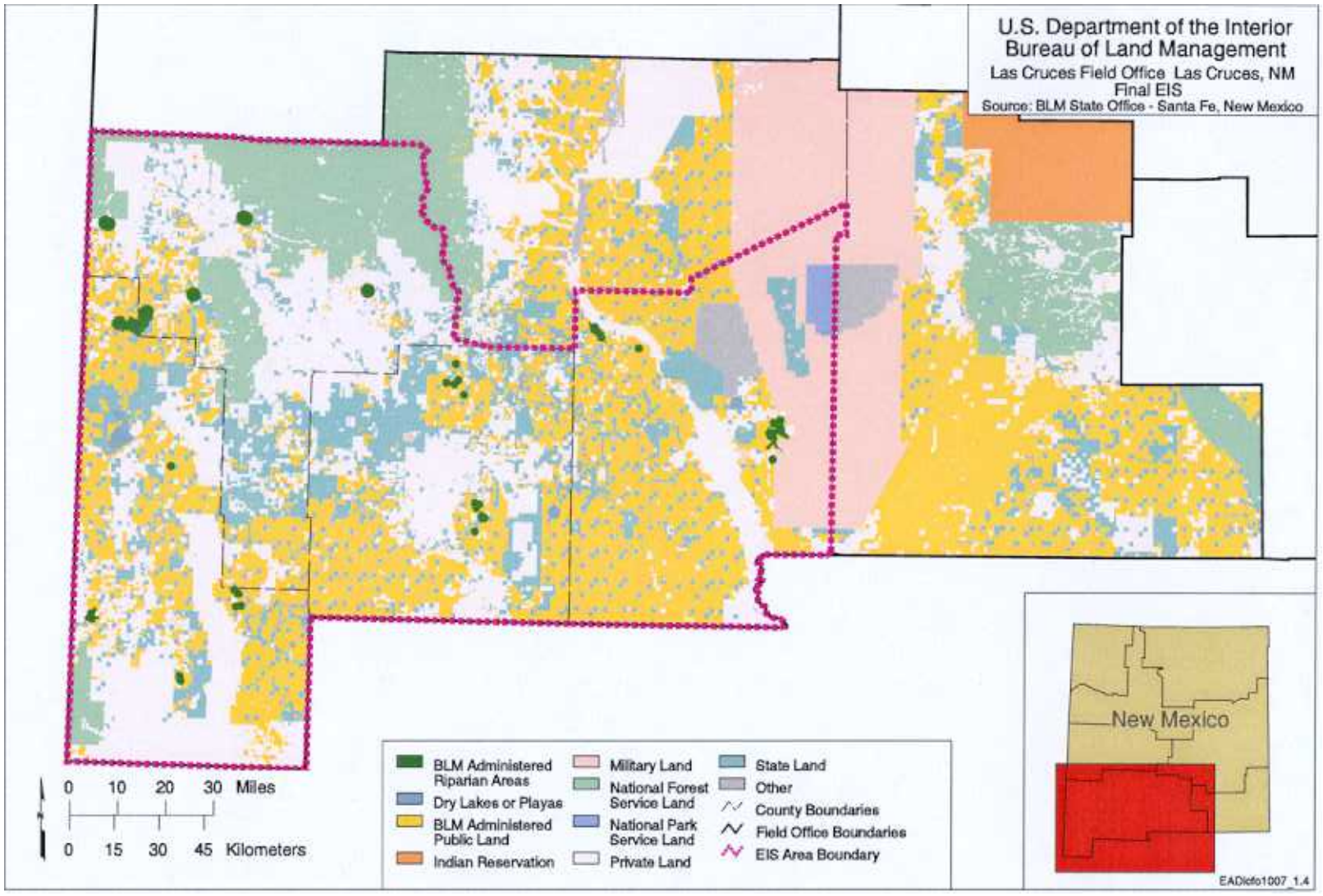

FIGURE 1.4 Land Status in the HMP Area of the Las Cruces Field Office

some cases, external nonsystem-related factors (e.g., high flows in adjacent surface water produced by dam operations). In addition, a trend is assigned to each riparian habitat classified as FAR [upward, downward, or not apparent (i.e., static)]. An upward trend indicates that the riparian habitat is improving with time; a downward trend is indicative of a riparian habitat with deteriorating conditions. A static trend indicates that changes in the condition of the riparian habitat are not apparent.

A riparian area is judged to be in PFC when there is adequate vegetation, stream bends (sinuosity), and, in some cases, large woody debris present to:

- Dissipate stream energy associated with high water flows, thereby reducing erosion and maintaining acceptable water quality;
- Filter sediment, capture bedload, and aid in floodplain/stream channel development;
- Improve water retention and groundwater recharge;
- Develop root masses that are capable of stabilizing stream banks against erosion;
- Develop diverse ponding and channel characteristics that provide suitable habitat, water depth, duration, temperature, and habitat for aquatic and nonaquatic fauna; and
- Support greater biodiversity (BLM 1998a).

Riparian areas that are specified as FAR are functional, but an existing soil, water, or vegetation attribute makes them susceptible to degradation. Nonfunctional (NF) riparian areas are clearly not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, or enhancing channel dynamics.

1.2.1.1 Apache Box

The Apache Box Area of Critical Environmental Concern (ACEC) is located in northwestern Grant County (Figure 1.5). The ACEC covers about 2,630 acres. Apache Box consists of a sheer-walled narrow canyon with cliffs over 500 feet high and a nearly pristine riparian area at the bottom of the canyon. Several federal- and state-listed and federal candidate species, numerous cultural resources, and a rare plant community are associated with the ACEC. The ACEC is currently managed to protect biological, scenic, cultural, special status species, and riparian values (BLM 1993b). The Apache Box ACEC is closed to off-highway vehicle (OHV) use and is classified as visual resource management (VRM) Class I.[1] Fire

[1] VRM classes are based on relative visual ratings of inventoried lands. Each class describes the degree of modification allowed to the basic elements of the landscape. The minimum management objective for VRM Class I allows natural ecological changes and very limited management activity. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to "visual areas of critical concern," wilderness areas, wild and scenic rivers, and other similar situations. For VRM Class II lands, changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the landscape. A contrast may be seen, but should not attract attention. For VRM Class III lands, contrasts to the basic elements caused by management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

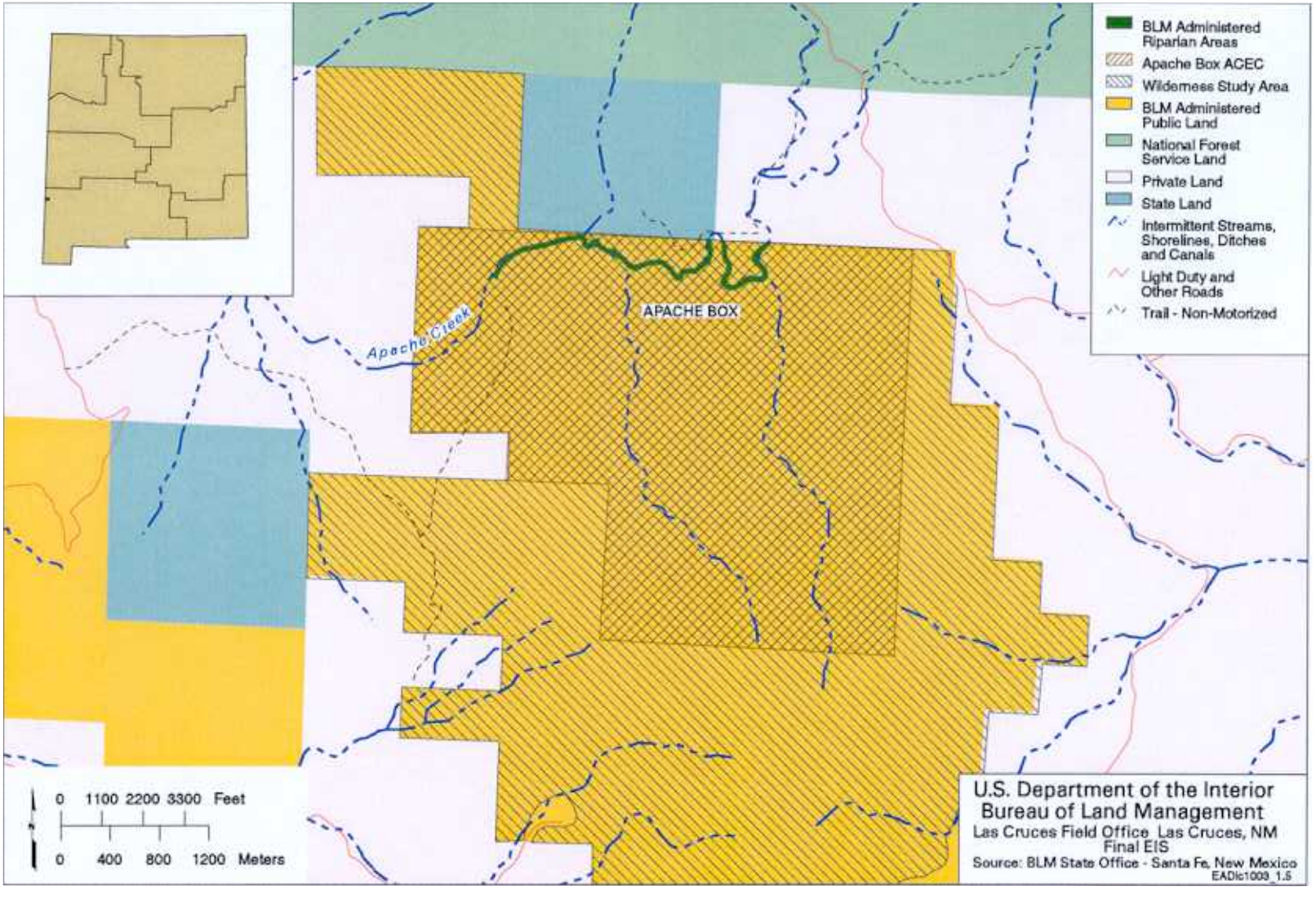

FIGURE 1.5 Apache Box ACEC Riparian Area

management practice in the ACEC allows for natural fires to burn in upland areas within prescribed conditions. The entire Apache Box riparian area is located within the 6,229-acre Apache Box Wilderness Study Area (WSA).

The designated Apache Box riparian area consists of approximately 18 acres of riparian habitat located along 1.5 miles of Apache Creek. On the basis of an undated survey, this area was rated as FAR with an upward trend. The function rating survey indicated that unacceptable conditions in the riparian area were due to upstream channel conditions outside of BLM control, although the exact conditions were not specified.

1.2.1.2 Bear Creek

The Bear Creek ACEC is located in central Grant County, approximately 15 miles northwest of Silver City, New Mexico (Figure 1.6). The ACEC covers about 1,480 acres. The upland area consists of a pinyon/juniper woodland located above a riparian area containing small cliffs and a box canyon. The ACEC is managed to protect riparian values as stipulated in the *Mimbres Resource Management Plan* (RMP) (BLM 1993b). The Bear Creek ACEC is closed to OHV use and is classified as VRM Class II.

The Bear Creek riparian area is approximately 20 acres in size and is located along approximately 1.25 miles of Bear Creek, a perennial stream, and supports an Arizona sycamore/Fremont cottonwood plant community. Although Allotment No. 04528 surrounds the Bear Creek riparian area, the 1993 Mimbres RMP called for the riparian area to be fenced off to exclude grazing (BLM 1993b). As of June 1999, the fence had not been completed. The riparian area composes less than 1% of the total allotment area, and a moderate amount of grazing occurs over the entire allotment (780 animal unit months [AUMs]).

During a survey of the riparian area conducted on April 29, 1998, it was determined that the Bear Creek riparian area was in NF condition because of the lack of adequate riparian plant cover to dissipate the downstream energy of stream flows. Riparian vegetation observed included cottonwoods and baccharis, although upland junipers seem to be encroaching on the current riparian area. It was also determined that excessive erosion was occurring within the riparian area.

1.2.1.3 Gila Lower Box

The Gila River is the largest free-flowing river in the United States. The Gila Lower Box ACEC is located in northwestern Hidalgo County, approximately 30 miles north of Lordsburg, New Mexico (Figure 1.7). The area encompasses 6,490 acres and is characterized by cliffs and steep canyon sides rising above a significant riparian area. The riparian area itself contains stands of Arizona sycamore, Fremont cottonwood, willows, and other riparian vegetation and is approximately 400 acres in size. Several state-listed and federal candidate animal species, or suitable habitat for those species, occur within the area. The riparian area in the Gila Lower Box is one of the few places in New Mexico where documented southwestern willow flycatcher territories occur. Along this riparian area there is about 1.25 linear miles of currently occupied southwestern willow flycatcher habitat, 8 miles of current potential habitat that is unoccupied, and 2.5 miles with no potential southwestern willow flycatcher habitat (BLM 1998b). In addition, two federally threatened fishes, the loach minnow and the spikedace, are known to be present in the Gila River within the Gila Lower Box. The area also provides seasonal

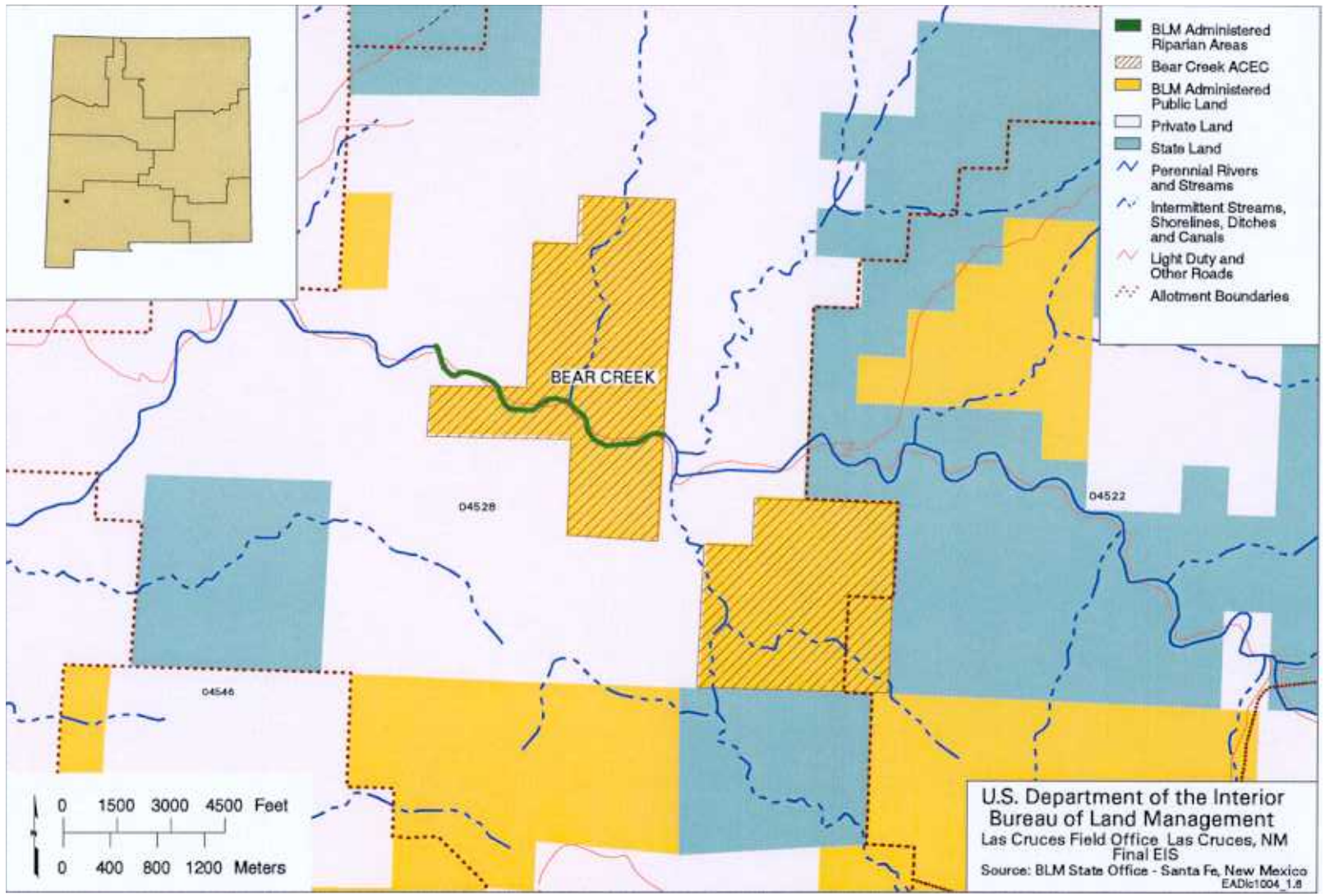

FIGURE 1.6 Bear Creek ACEC Riparian Area

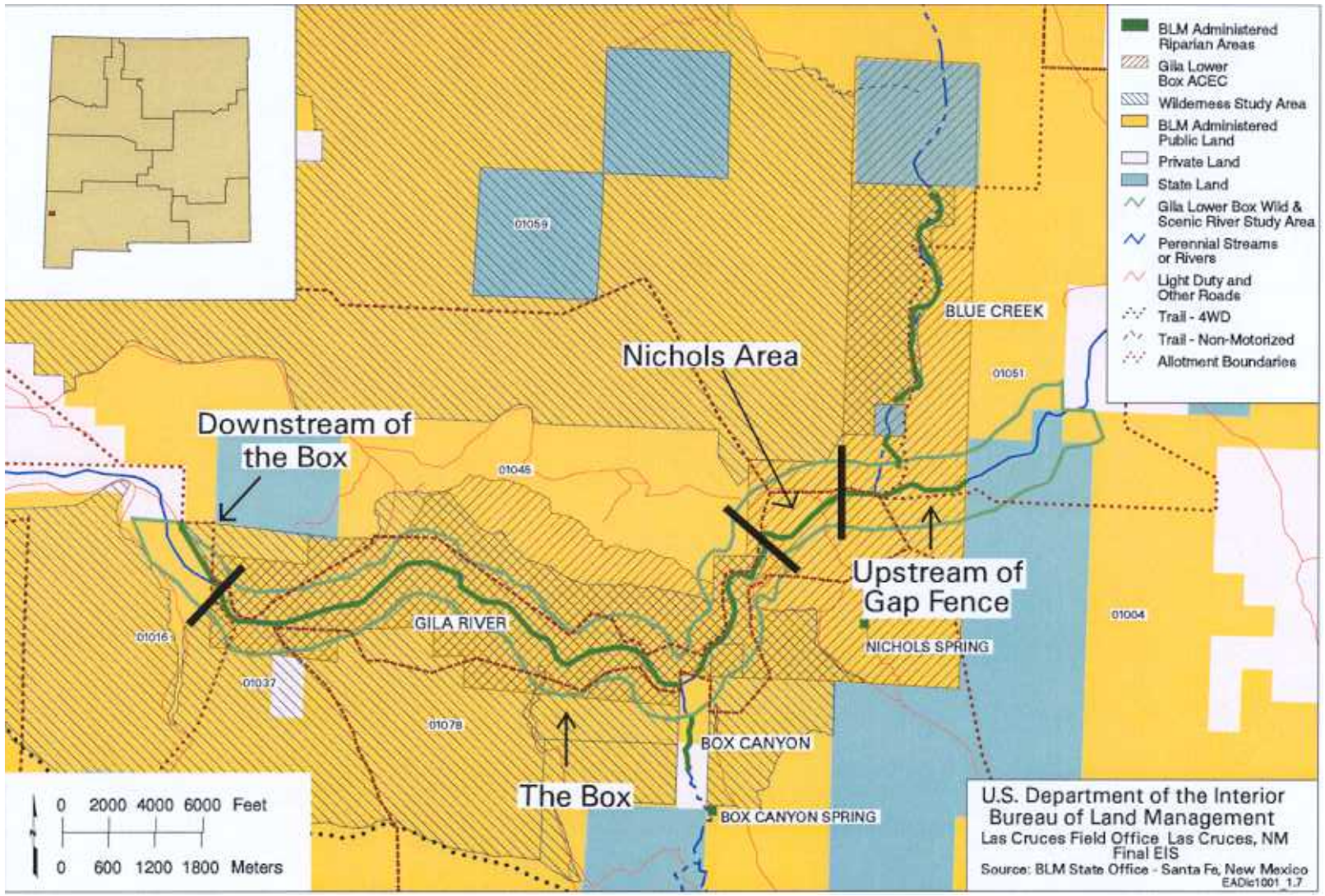

FIGURE 1.7 Gila Lower Box ACEC and Blue Creek, Box Canyon, and Nichols Spring Riparian Areas

habitat for several species of raptors. The Chiricahua and lowland leopard frogs (federal candidate and state endangered, respectively) were once abundant throughout the Gila Lower Box, but have apparently been completely replaced by bullfrogs.

The Gila Lower Box is designated as a watchable wildlife area and has no developed recreational sites. Common recreational uses in addition to wildlife viewing include camping, picnicking, fishing, hunting, kayaking or floating, and swimming. The Gila Lower Box riparian area is included within the Wild and Scenic River Study Area. Although no official recreational use information is available for the Gila Lower Box, estimated use is approximately 33 visitor days per week. The Gila Lower Box ACEC is closed to OHV use and is designated as VRM Class II. Most of the Gila Lower Box riparian area is within the 8,555-acre Gila Lower Box WSA.

Many archaeological sites are known to exist within the boundaries of the Gila River watershed. The types of prehistoric sites include quarries, petroglyphs, rock shelters, lithic scatters, and structures. Data on historic sites are nonexistent (BLM 1985).

Two grazing allotments are associated with the Gila Lower Box. Allotment No. 01051 is located at the eastern end of the Gila Lower Box (upstream of the Gap Fence) and has a grazing allowance of 720 AUMs. Less than 1% of the allotment consists of riparian area, which receives little to no grazing pressure. Allotment No. 01016 is located at the western end of the Gila Lower Box (downstream of the Box) and has a grazing allowance of 288 AUMs. Approximately 3% of this allotment is riparian habitat, and the riparian area receives heavy grazing by cattle. No grazing management plan is in place for either of these grazing allotments.

The Gila Lower Box is the largest and most significant riparian area on BLM land within the Las Cruces Field Office area. It has been recognized as needing special management protection to restore and rehabilitate the degraded riparian area (BLM 1993b). Four riparian habitat segments have been identified on the basis of differences in livestock management and potential natural communities, and these areas have been surveyed. Additional information for these four segments is provided below.

Upstream of Gap Fence: This segment includes the most upstream portion of the riparian area. In 1997, this portion of the riparian area was assigned a PFC rating. It was determined that the riparian plant community was diverse, although the surveyors believed that the abundance of individual species and the amount of riparian cover could be greater. A fair number of larger trees occur within the riparian area.

Nichols Area: The Nichols Area segment is located a short distance downstream of the previously described segment. This segment was also assigned a PFC rating on the basis of a survey conducted on August 21, 1997. The vegetative community in this segment was composed primarily of younger plants, although there were some older age classes and a few remnant trees. The survey team believed that a greater amount of vegetation was still needed on the floodplain to dissipate the energy of runoff flows.

The Box: Somewhat farther downstream than the previous segment, the Box segment was also assigned a PFC rating during a survey conducted on August 21, 1997. As with the segment in the Nichols area, this segment

contained a relatively young vegetative community. Sediment was being adequately trapped by the vegetation, and the banks appeared to be stable. The Box segment is located entirely within the Gila Lower Box WSA.

Downstream of the Box: The segment downstream of the Box was assigned an NF rating during the survey conducted on August 21, 1997. Although some riparian vegetation (primarily baccharis, with some willows and cottonwood) was present, disturbance from grazing and irrigation activities had degraded the riparian area and continues to prevent recovery.

1.2.1.4 Blue Creek

The Blue Creek riparian area (Figure 1.7) covers about 30 acres and is located on Blue Creek, near the upstream end of the Gila Lower Box (Section 3.2.3 of the Draft EIS [DEIS] [BLM 1999]). The Blue Creek riparian area is located within Allotment Nos. 01051 and 01059, although the riparian area constitutes less than 1% of the total area for either allotment. The grazing preference is for 8,748 AUMs for Allotment No. 01059 and 720 AUMs for Allotment No. 01051; use of grazing areas is on a rotational system. Although there is only a moderate to low use of grazing areas over the entire ranch, functional use surveys indicated that grazing by livestock may have adversely affected the riparian area. Most of the Blue Creek riparian area in Allotment No. 01059 is within the 14,896-acre Blue Creek WSA and a Wild and Scenic River Study segment. On the basis of apparent differences in condition and probable differences in livestock management, the riparian area was divided into two segments (1 and 2) for evaluation purposes. Details of the riparian surveys conducted June 4, 1998, are presented below by segment.

Segment 1: Segment 1 consists of about 16 acres of riparian habitat located in the upstream portion of the Blue Creek corridor. A relatively diverse riparian plant community was encountered during the survey, although it was believed that abundance and recruitment were low. Vegetation species encountered included cottonwood, sycamore, willow, baccharis, joint grass, rabbitfoot grass, ash, and hackberry. Most of the cottonwood and willow trees present were older specimens, an indication of the lack of recruitment. The survey team believed that a reduction in grazing pressure would lead to increased vegetative cover and enhancement of riparian conditions. Segment 1 was assigned an NF rating on the basis of the results of the survey conducted June 4, 1998.

Segment 2: Segment 2 covers about 14 acres and is located just downstream of Segment 1. As with Segment 1, a diverse plant community was observed, including sycamore, willow, cottonwood, baccharis, joint grass, rabbitfoot grass, hackberry, ash, and alder. In addition to older individuals of tree species such as willow, cottonwood, and sycamore, younger trees were also present. However, there appeared to be a lack of intermediate-age trees, which perhaps indicates a past recruitment failure that was no longer occurring. It was speculated that this improvement in condition could have been related to relatively recent changes in livestock management that excluded grazing from this segment. On the basis of the June 4, 1998, survey, a function rating of FAR, with an upward trend, was assigned to Segment 2.

1.2.1.5 Gila Middle Box

The Gila Middle Box is located in southwest Grant County about 27 miles north of Lordsburg and 20 miles west of Silver City (Figure 1.8). The area covers about 840 acres. It

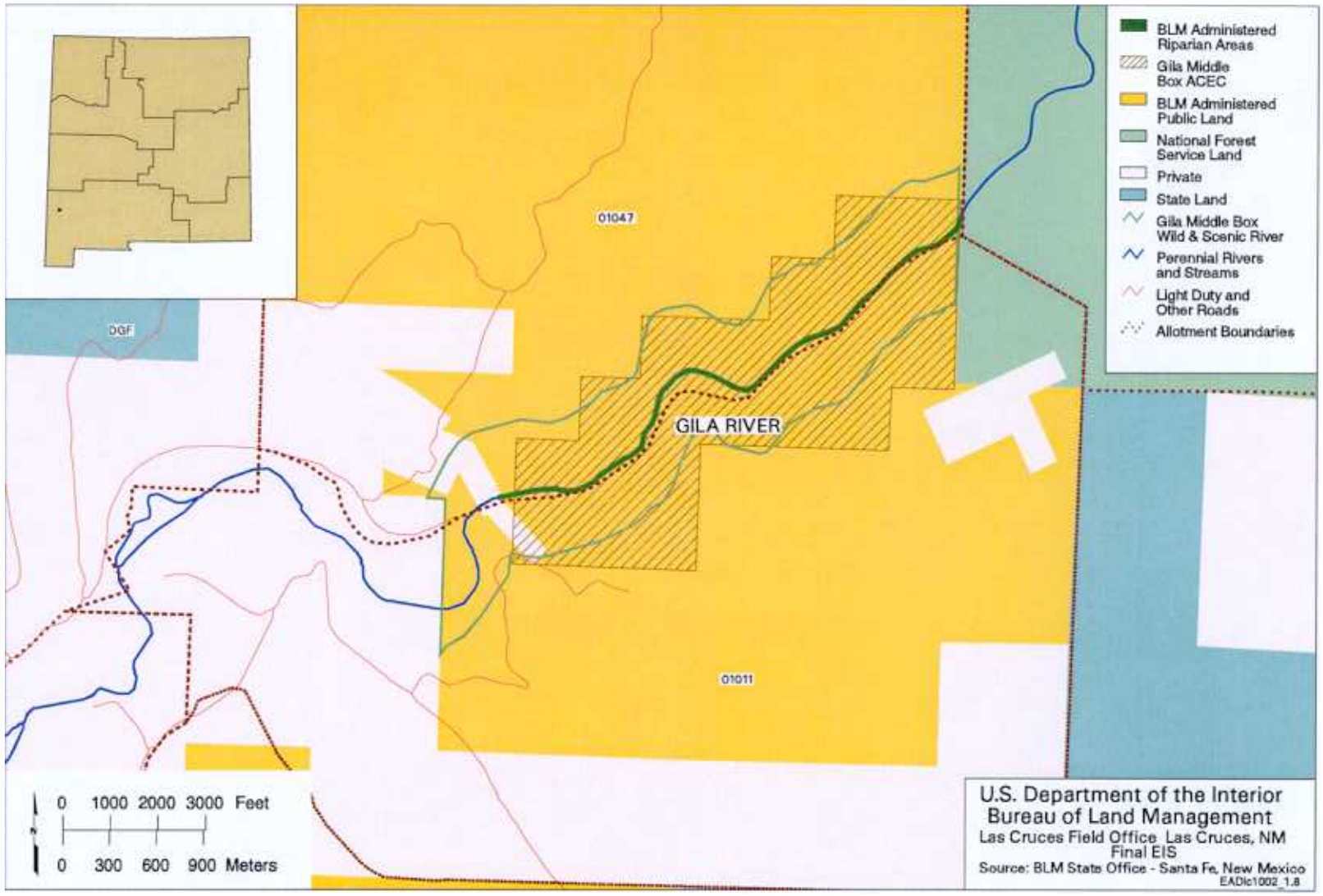

FIGURE 1.8 Gila Middle Box ACEC and Gila River Riparian Area

was designated as an ACEC in 1984. The Middle Box area is a narrow, rugged canyon with steep walls. The riparian area is within a Wild and Scenic River Study unit. The canyon provides habitat for numerous special status species, including two federal threatened fish — the loach minnow and the spikedace — that have been collected from the Gila River within the Gila Middle Box. Although the southwestern willow flycatcher historically occurred along portions of the Gila River, the Middle Box area does not include suitable habitat for this species and is unlikely to develop such habitat because of landform and flow regimes (U.S. Fish and Wildlife Service [USFWS] 1997). Chiricahua and lowland leopard frogs (federal candidate for listing and state endangered, respectively) were historically abundant here but apparently have been completely replaced by bullfrogs. Management goals for the Gila Middle Box ACEC are designed to protect riparian values. The ACEC is closed to OHV use and is classified as VRM Class II. An undated survey to evaluate the functional condition of the riparian area in the Gila Middle Box found that the 2.5 miles (30 acres) of riparian area was in PFC.

Allotments Nos. 01011 and 01047 include portions of the Middle Box riparian area and have a total grazing preference of more than 4,600 AUMs. Less than 1% of these allotments consist of riparian areas. No grazing occurs in the riparian areas of Allotment No. 01011, and this allotment is managed to include a resting period of one growing season over the entire allotment after each year of grazing. No grazing occurs in the associated riparian area of Allotment No. 01047.

1.2.1.6 Owl Canyon

The Owl Canyon riparian area is located along an intermittent, interrupted stream in the Central Peloncillo Mountains ACEC (Figure 1.9). The ACEC is classified as VRM Class I. OHV use in the ACEC is limited to designated roads and trails. The riparian area is approximately 1.1 miles long and 18 acres in size. The entire Owl Canyon riparian area is within the 14,678-acre Gray Peak WSA. The canyon contains two separate segments of riparian areas, each with its own natural community. Both were analyzed in 1997 and are in PFC. Vegetation in the riparian area was found to consist of baccharis, soapberry, deer grass, scarlet hedgenettle, false indigo, and alkali sacaton. Grazing has been excluded from Owl Canyon. Although the riparian survey conducted November 9, 1997, found evidence of heavy browsing, it was unclear whether livestock or wildlife were responsible.

1.2.2 Wetlands

The following text describes existing conditions for the three wetland riparian areas (Lordsburg Playa, Isaack Lake, and San Luis Lake) on lands managed by the Las Cruces Field Office.

1.2.2.1 Lordsburg Playa

The Lordsburg Playa consists of playa lakes located in Hidalgo County (Figure 1.10). The total area of the playa is approximately 8,000 acres. Although the playas are dry lakebeds during most of the year, they are inundated and exhibit lentic characteristics during periods of high runoff. This area includes a Special Management Area (SMA) and a Research Natural Area (RNA) of 4,510 acres. The RNA is the central of three playa lakes. Multiple uses designated for the playa include recreation and grazing (the north and middle playa grazing allotment is No. 01034; the south playa allotments are Nos. 01034 and 01068). The Lordsburg Playa RNA is closed to OHV use and is classified as VRM Class II. The south

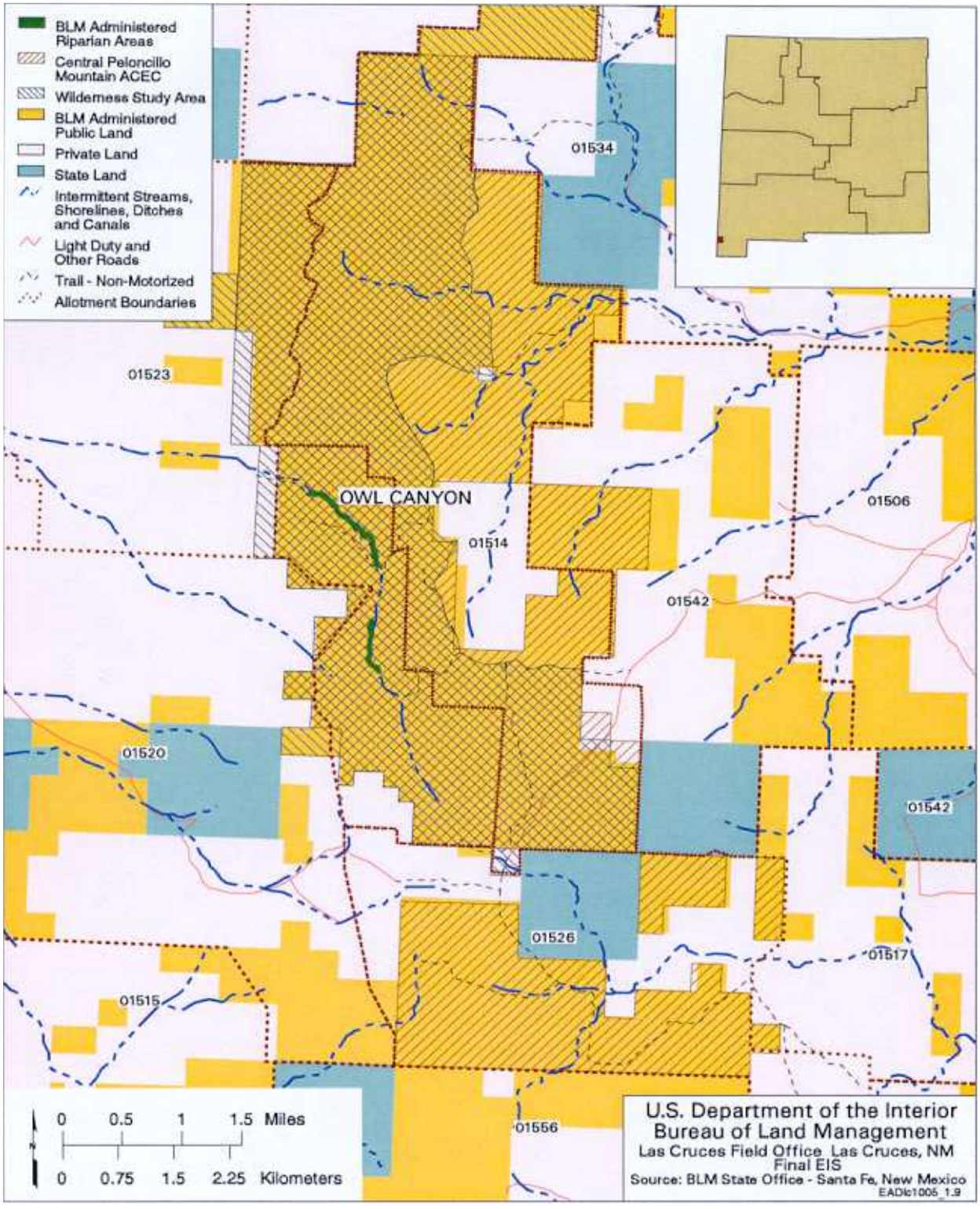

FIGURE 1.9 Central Peloncillo Mountains ACEC and Owl Canyon Riparian Area

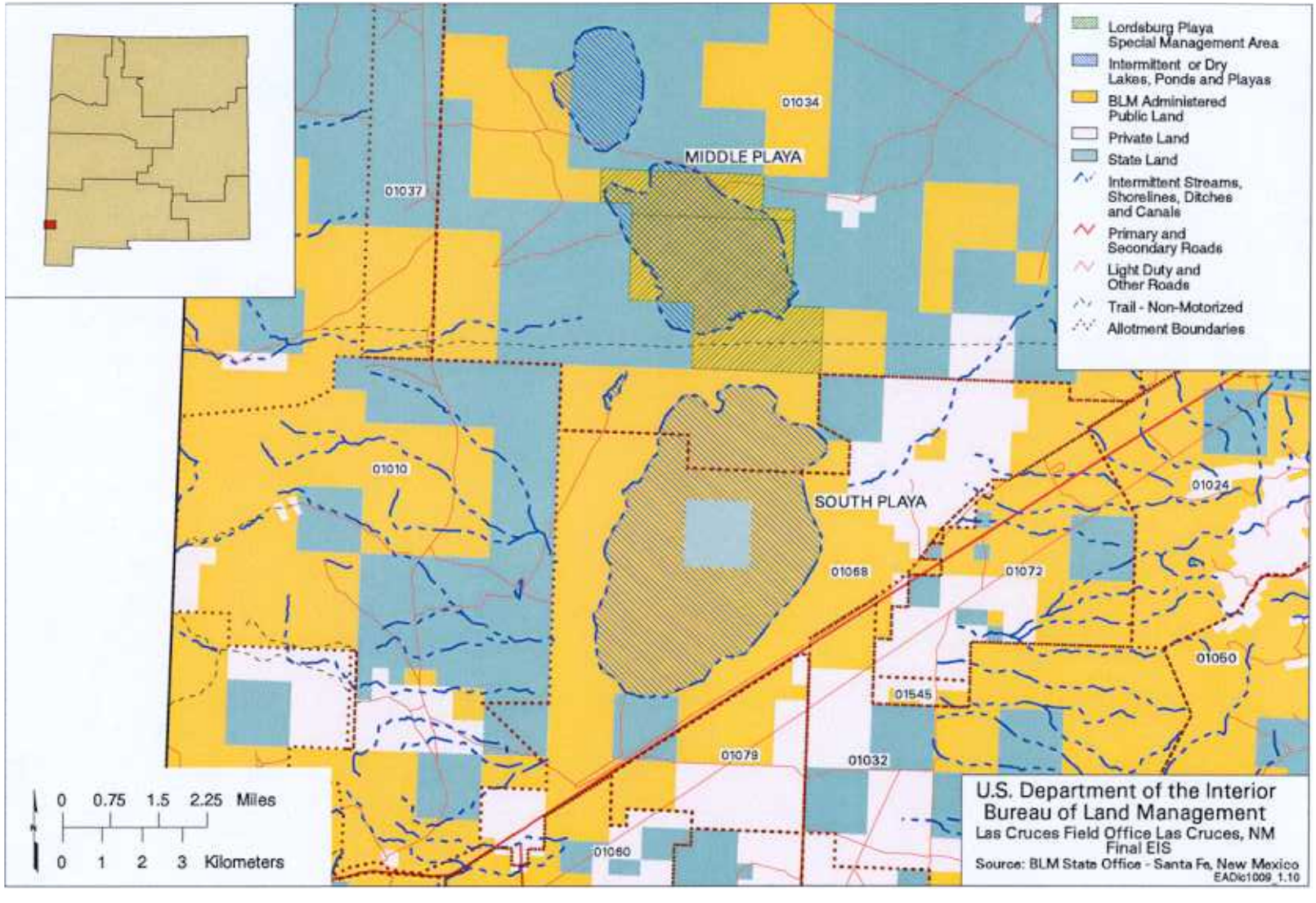

FIGURE 1.10 Lordsburg Playa Special Management Area

playa is also closed to OHV use and is classified as VRM Class III. Riparian/wetland vegetation is primarily restricted to the edges of the playa. Griffiths salt bush is a rare and sensitive shrub species that grows on the playa margins and is found scattered within the south playa and on alkali sacaton flats. The principal wildlife include migrating shorebirds and waterfowl in wet years. The soil in the area consists of a very heavy clay, which results in no water infiltration below the surface. The playas do not support any obligate riparian species. Designated use values for the Lordsburg Playa include paleontological, biological, and research uses. The functional ratings for the playas are unknown.

1.2.2.2 Isaack Lake

The Isaack Lake wetland area is located in Doña Ana County and totals about 29 acres of public land (Figure 1.11). The designated use for the wetland area is grazing. Isaack Lake is within Allotment No. 15007. The functional rating for the wetland is unknown. Isaack Lake is an ephemeral playa lake that does not support obligate riparian species.

1.2.2.3 San Luis Lake

The San Luis Lake wetland area is located in Doña Ana County and totals about 200 acres (Figure 1.12). The designated use for the wetland is grazing. San Luis Lake is located within Allotment No. 03005. The functional rating for the wetland is unknown. San Luis Lake is an ephemeral playa lake that does not support obligate riparian species.

1.2.3 Springs and Seeps

The following text presents information on the existing conditions for riparian areas associated with springs and seeps under Las Cruces Field Office jurisdiction spring or seep areas. Additional information about conditions in the riparian areas associated with specific springs and seeps is presented in the following text.

1.2.3.1 Cooke's Range ACEC

The Cooke's Range ACEC occupies 17,160 acres in Luna County (Figure 1.13). The riparian area associated with springs and seeps within the ACEC totals about 5 acres. The Cooke's Range is also designated as a WSA, and the riparian areas are within this WSA. Grazing is allowed throughout the area. The principal uses are biological, scenic, cultural, historical, and recreational. Priority wildlife species in the ACEC are deer and antelope. The ACEC is designated as a Scenic ACEC with a Class I VRM designation. OHV use within the ACEC is limited to designated roads and trails. Fire management allows for natural fires to burn within prescribed conditions (BLM 1993b).

The riparian areas within the Cooke's Range ACEC are all within Allotment No. 03028, which has an allowance of 10,428 AUMs. Many of the springs that occur within the allotment are developed to provide water for cattle. Grazing is rotated among the pastures of the allotment from year to year. Functional condition surveys have been completed for riparian areas at three springs within the ACEC; additional information from those surveys is provided below.

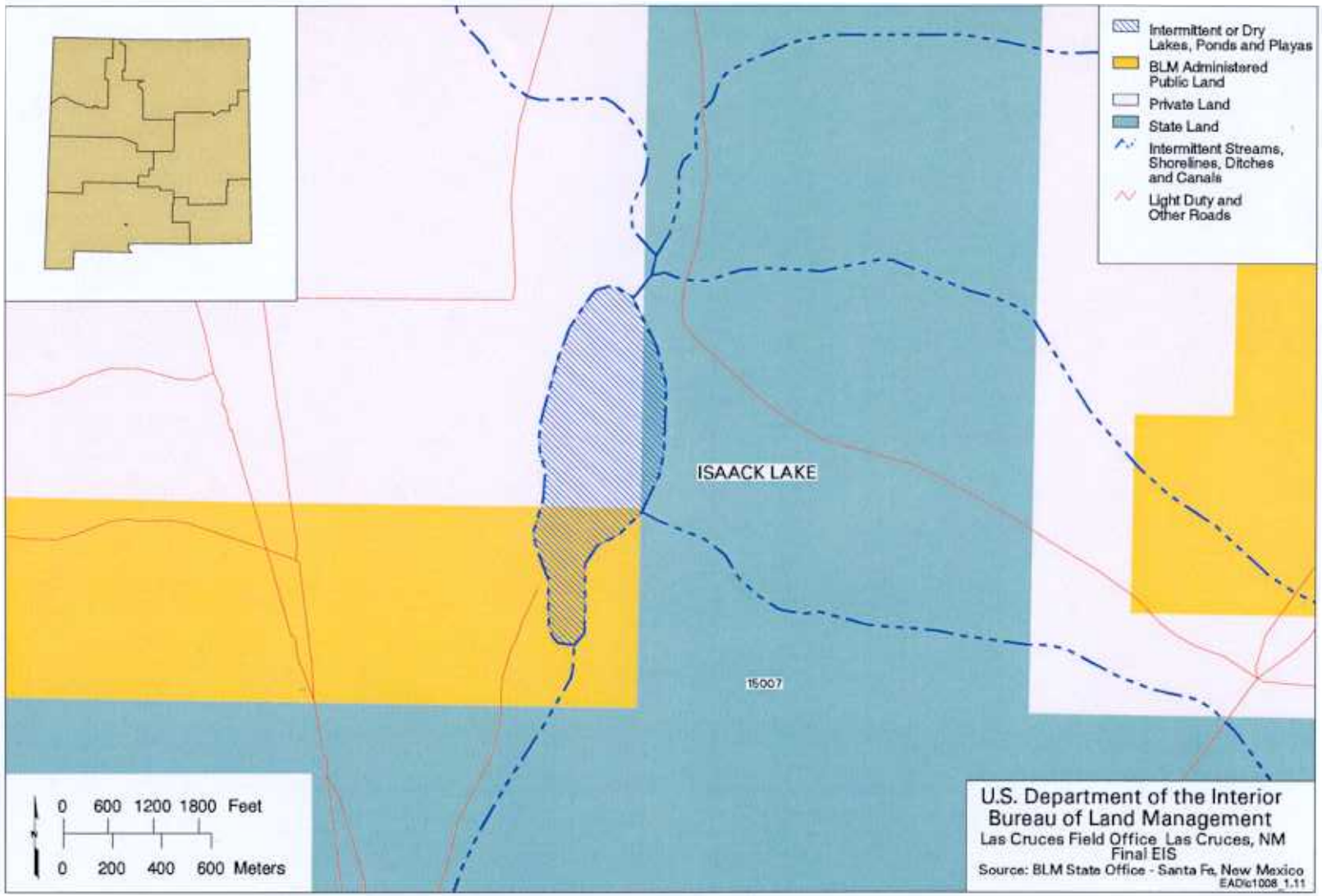

FIGURE 1.11 Isaack Lake

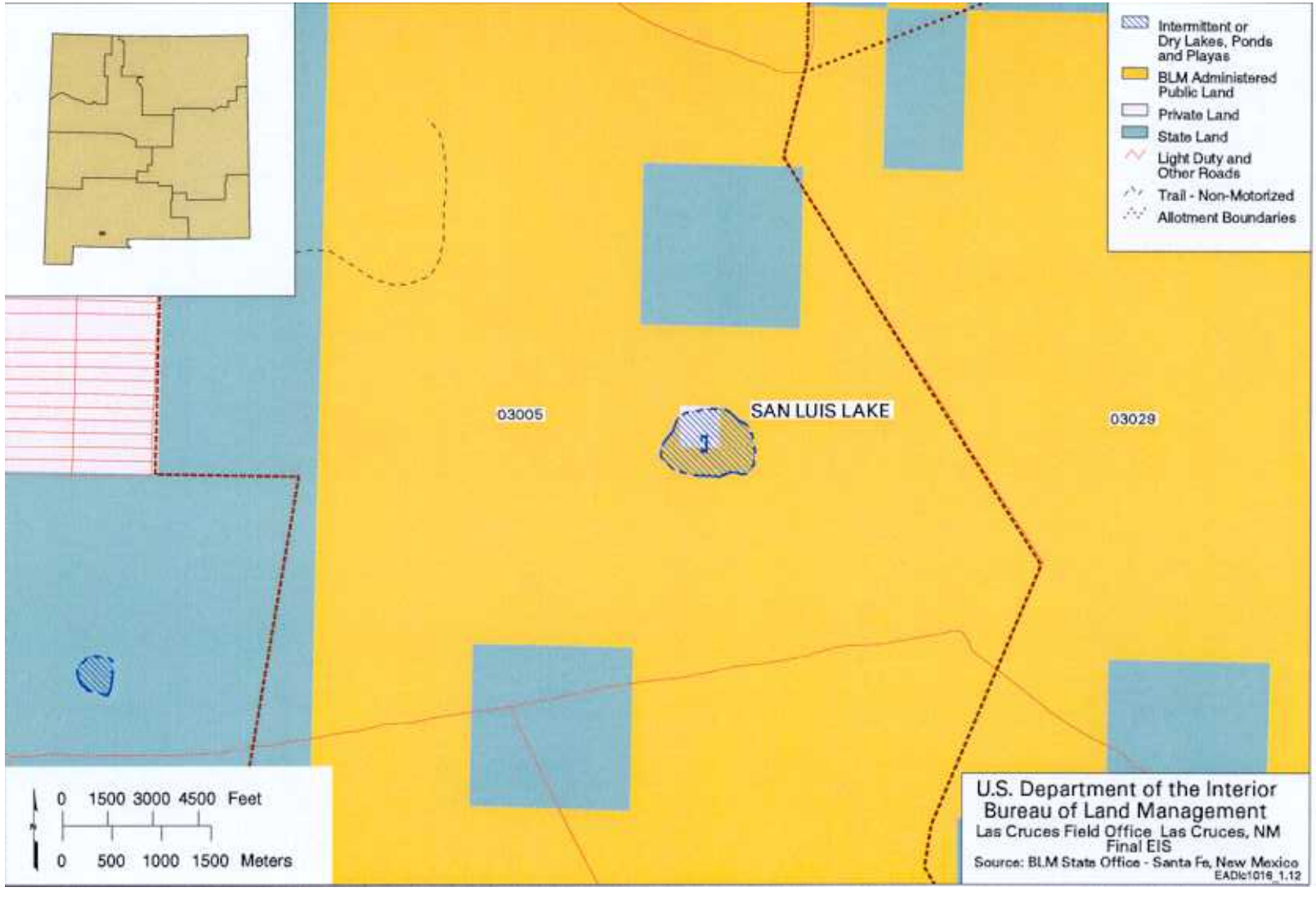

FIGURE 1.12 San Luis Lake

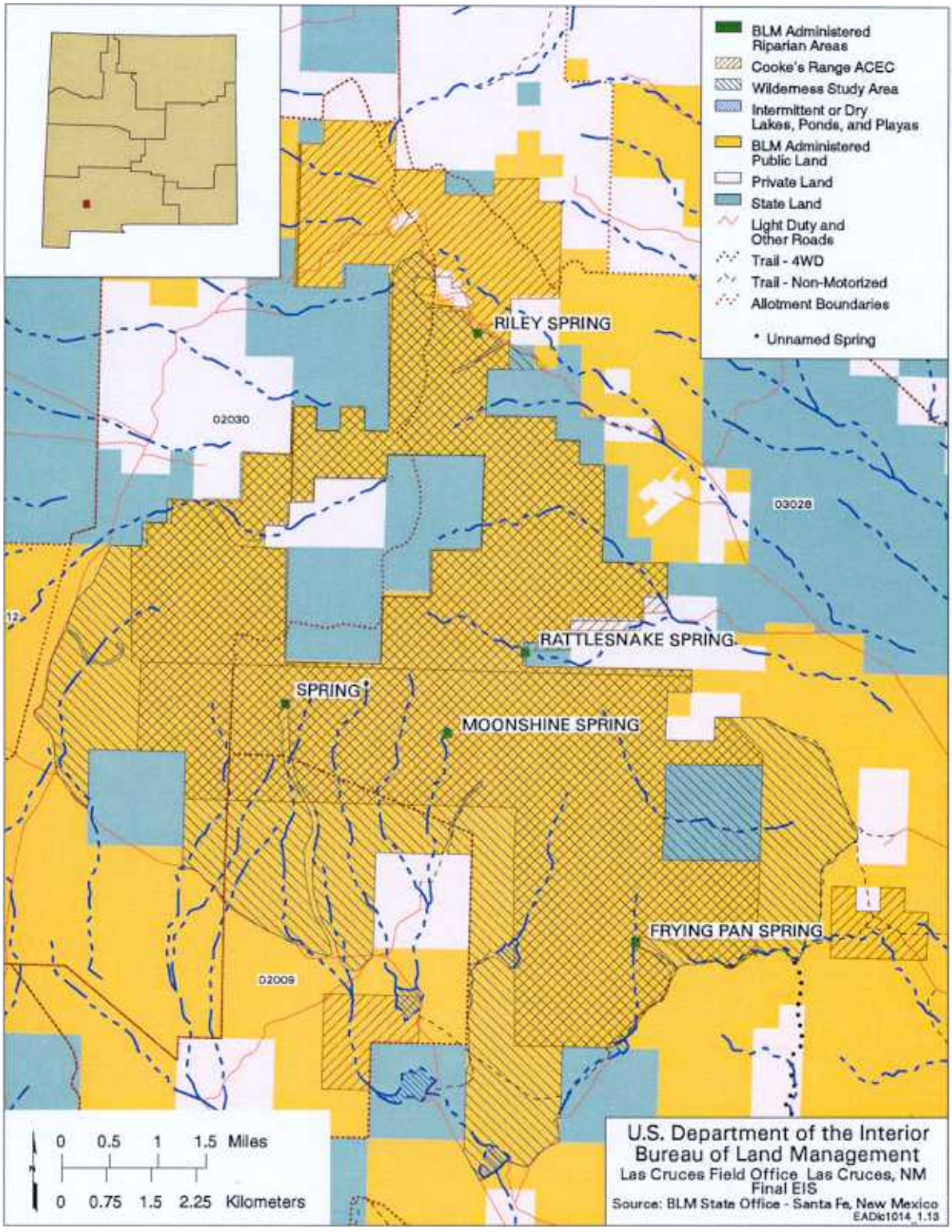

FIGURE 1.13 Cooke's Range ACEC Riparian Areas

Frying Pan Spring: Frying Pan Spring is developed; a rating of FAR, with no apparent upward or downward trend, was assigned to this site.

Moonshine Spring*:* A rating of FAR, with no apparent upward or downward trend, was assigned to the Moonshine Spring riparian area. The date for the riparian area survey is unknown.

Riley Spring: Riley Spring is developed; a rating of FAR, with no apparent upward or downward trend, was assigned to the associated riparian area. The date of the riparian area survey is unknown.

1.2.3.2 Cowboy Spring ACEC

The Cowboy Spring ACEC occupies about 6,740 acres in southern Hidalgo County (Figure 1.14). The area is characterized by hills and the upper reaches of canyons draining southwest. At an elevation of 6,300 feet above mean sea level (MSL), Cowboy Rim, a ridge extending generally northwest to southeast, dominates the landscape. Elephant Butte Canyon is about 325 feet deep. Seasonal water flows in the canyons support riparian wildlife such as turtles and frogs, and deciduous trees grow along watercourses. Vegetation in the ACEC includes dense grass stands, sacahuista, and Madrean evergreen woodland (primarily emory oak). The ACEC has been designated as a WSA, and grazing is allowed in the area. Use values for the ACEC include biological and special status species. OHV use within the ACEC is limited to designated roads and trails. The ACEC is classified as VRM Class II. Fire management allows for natural fires to burn within prescribed conditions. A portion of Cowboy Creek forms part of the northeastern boundary of the Cowboy Spring WSA (6,699 acres). The WSA is considered to have an exceptionally high ecological diversity. State-listed endangered species occurring in the WSA include the white-eared hummingbird and thick-billed kingbird. The WSA once supported a population of the Chiricahua leopard frog, but the current status of this population is unknown.

The 10 acres of springs and seeps in the vicinity of the ACEC include Elephant Butte Canyon, Lawhorn Canyon, and Cowboy Spring. Grazing is allowed in Elephant Butte Canyon and in Lawhorn Canyon, which are within Allotment No. 01066 (1,056 AUMs). The functional ratings for these areas are unknown. Cowboy Spring has been developed with a windmill, and no riparian area remains at the spring. Additional springs and seeps exist in the WSA but have not been mapped or evaluated.

1.2.3.3 Florida Mountains ACEC

The Florida Mountains located in central Luna County are rugged and have steep cliffs (Figure 1.15). Four peaks rise above 7,000 feet above MSL, while the adjacent plains are at an elevation of about 4,300 feet above MSL. The Florida Mountains are designated both as an ACEC (15,660 acres), with scenic and biological values, and as a WSA. OHV use is prohibited in the central portion of the ACEC/WSA and is limited to designated roads and trails in the remainder of the area. The ACEC/WSA is classified as VRM Class I. Fire management allows for natural fires to burn within prescribed conditions. Predominant vegetation types in the WSA are creosote (rolling uplands), mixed shrub (mountain and rolling uplands), half shrub (rolling upland), and mesquite (rolling upland and sand dunes). The area also contains endemic and relict plant communities. The Florida mountainsnail is a state-listed endangered species and a federal species of concern known to occur within the area. Big-game species include mule deer, ibex

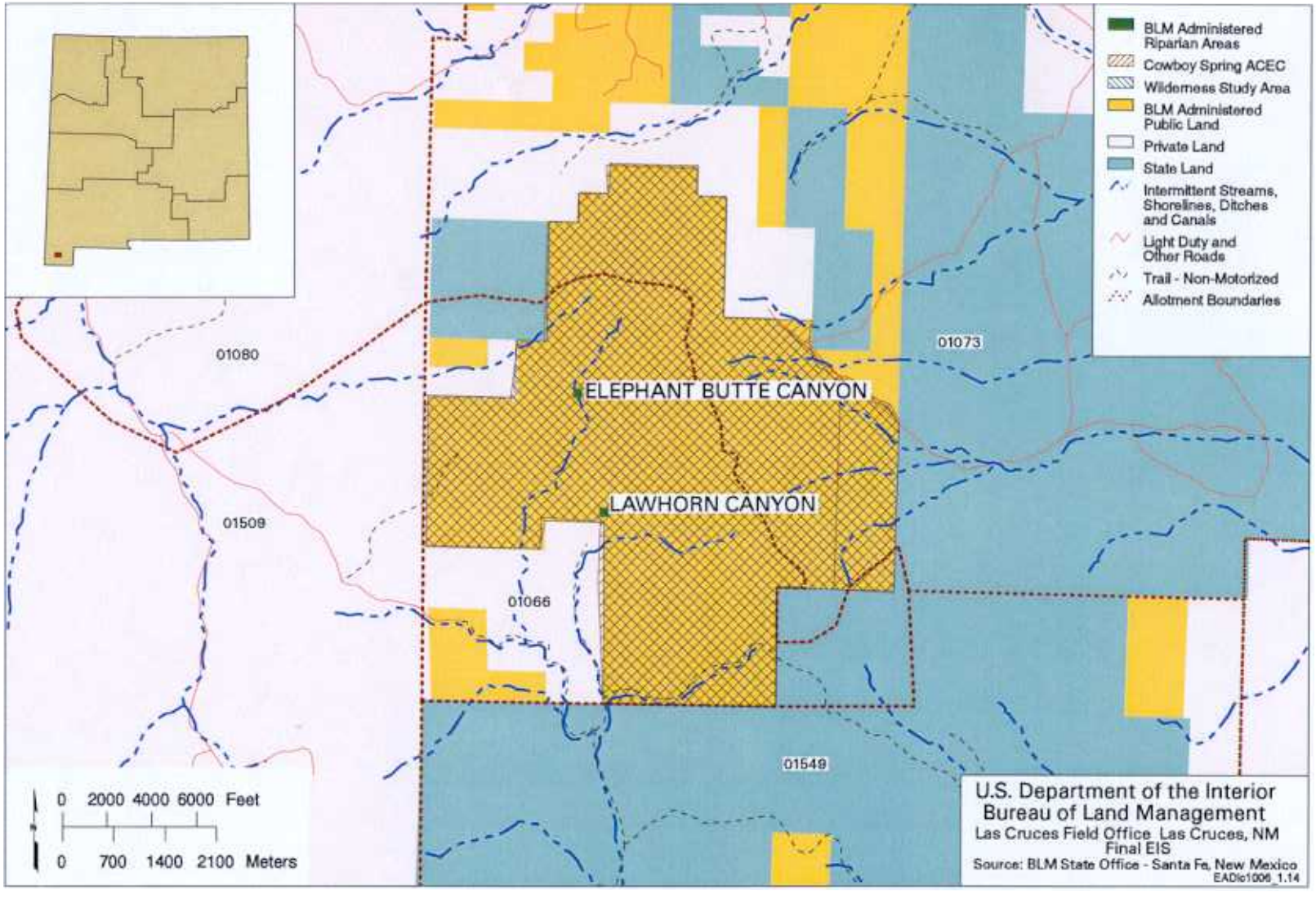

FIGURE 1.14 Cowboy Spring ACEC Riparian Areas

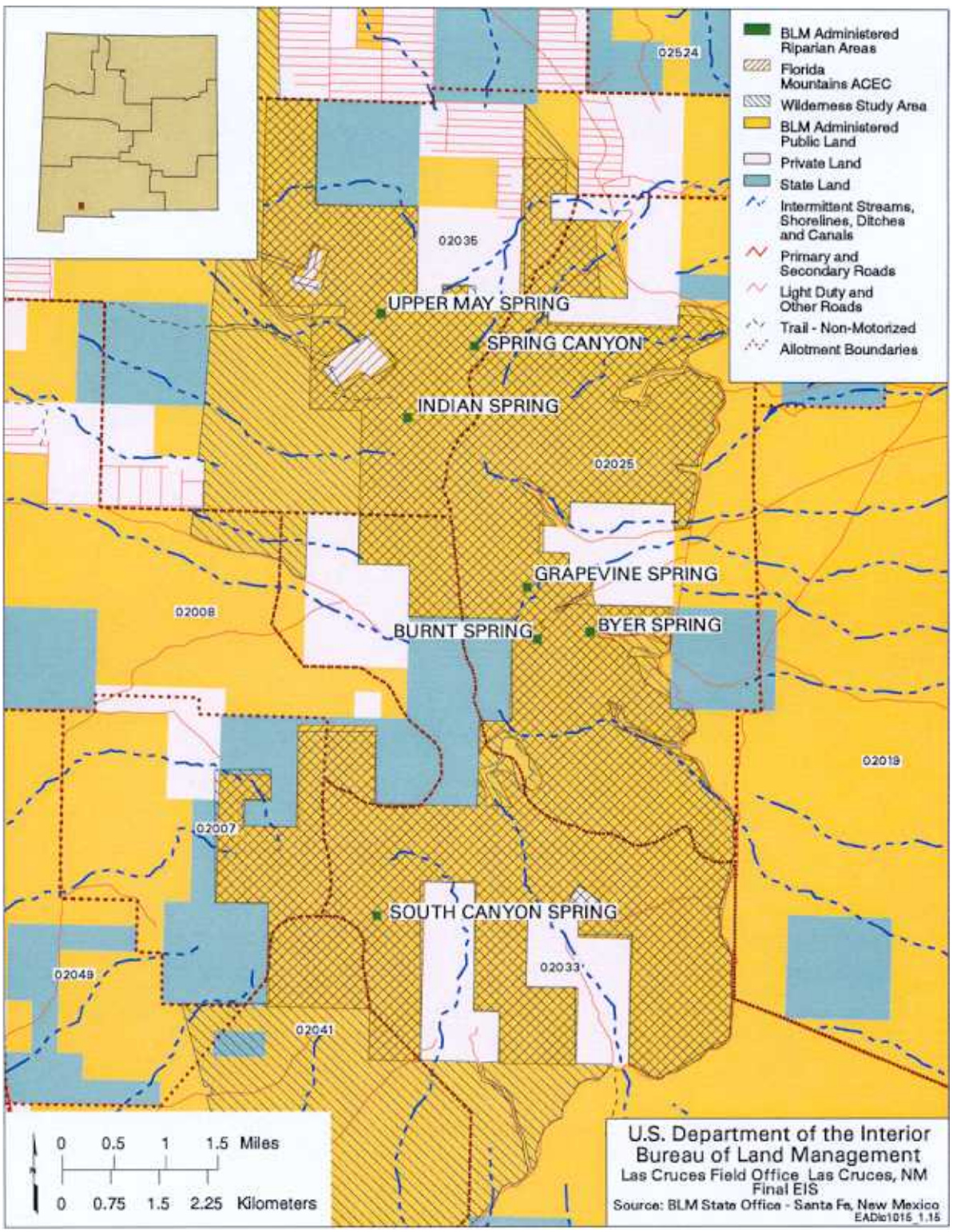

FIGURE 1.15 Florida Mountains ACEC Riparian Areas

(introduced), and other upland game species. Other mammals that occur in the ACEC/WSA include mountain lion, javelina, coyote, bobcat, badger, ringtail, gray fox, and kit fox.

The riparian or wetland areas associated with natural springs in the ACEC total about 5 acres and are scattered throughout the range. Many of the springs and seeps are unreliable sources of water during dry years. At least seven springs and seeps are located within the ACEC/WSA. Riparian vegetation identified within these spring areas include willow, hackberry, sedges, deer grass, and cattails. Three grazing allotments (Nos. 02025, 02033, and 02035) encompass the riparian areas associated with the springs and seeps. Of the six springs and seeps for which functional condition evaluations have been performed, four were found to be in PFC, one was considered NF, and one was considered to be FAR, with no apparent upward or downward trend. (No functional condition evaluation has been performed for South Canyon.) Additional information about springs and seeps within the ACEC for which functional condition evaluations have been completed is provided below.

Indian Spring: The lentic riparian area associated with Indian Spring is approximately 0.2 acre in size. The spring is located on a steep, rocky slope and lacks vegetation. This area is within Allotment No. 02035. Water from the spring is piped to a livestock tank and troughs, which were overflowing at the time of a functional condition survey conducted August 8, 1996, and which caused the dewatering of the riparian area. Indian Spring was assigned a rating of NF.

Byer Spring: The riparian area associated with Byer Spring covers about 0.2 acre. Vegetation of this lentic riparian area includes hackberry and a few grapevines. During a functional condition survey conducted March 5, 1998, a gully was observed that had cut up from below and that extends to bedrock at the spring. Development of the spring includes three livestock tanks, and at the time of the survey, the spring was being dewatered by an overflowing tank. The riparian area surrounding the spring is unfenced. Allotment No. 02025 is associated with this location, and the area appeared to be heavily grazed during the condition survey. The riparian condition of Byer Spring was rated as FAR, with no apparent upward or downward trend.

Burnt Spring: The Burnt Spring riparian area is about 0.5 acre in size and is located within Allotment No. 02025. Vegetation of the lentic riparian area includes willow, cattails, hackberry, and grapevines. The spring is located on a steep slope, and the substrate consists mostly of bedrock. Development at Burnt Spring concentrates water into a concrete-walled pool and includes a livestock tank and two troughs connected to the pool by a quarter-mile-long pipeline. This location was assigned a functional rating of PFC during a survey conducted March 5, 1998.

Grapevine Spring: The lentic riparian area associated with Grapevine Spring is approximately 0.1 acre in size and is maintained by a small perennial seep or spring. Vegetation of the riparian area includes grapevines, oaks, and hackberry. Evidence of hackberry recruitment was observed during a survey conducted June 3, 1998. This area is within Allotment No. 02025, and development of the spring includes a headwall at the seep, which extends to a pool from which water is piped. The pipeline connects to two troughs fitted with float valves. A fence surrounds the pool and prevents entry of livestock. A rating of PFC has been assigned to this location.

Spring Canyon Seep: The riparian area associated with Spring Canyon Seep is about 2 acres in size. Vegetation of this lentic riparian area includes sedges, deer grass, moss, willow, and hackberry. Evidence of hackberry and willow recruitment was observed. This site is located within Allotment No. 02035. Development of the spring includes a watering trough. A functional condition survey conducted June 3, 1998, determined that the riparian area, which is associated with an intermittent spring, had achieved its potential extent. Thus, a rating of PFC was assigned to the riparian area.

Upper May Spring: The Upper May Spring riparian area is about 0.1 acre in size. This lentic riparian area is associated with a small intermittent seep on a steep, rocky slope. This site is associated with Allotment No. 02035, and development of the spring includes a trough fitted with a float valve. Although no excessive erosion or deposition was observed during a survey conducted June 3, 1998, the area and surrounding slopes were determined to be somewhat eroded. A rating of PFC was assigned to this location.

1.2.3.4 Organ/Franklin Mountains ACEC

The 56,480-acre Organ/Franklin Mountains ACEC is located in Doña Ana County (Figure 1.16). The designated multiple uses for this ACEC are recreation, wilderness, and grazing; identified use values are biological, scenic, cultural, special status species, riparian, and recreational. Vegetation includes riparian ecosystems associated with springs and several unique cactus communities. Important species include rare endemic plant species and federal- and state-endangered cactus community species. Listed plant species occurring within the ACEC include Sneed's pincushion cactus (federally and state listed as endangered) and Organ Mountain evening primrose (federal species of concern, state sensitive species); listed wildlife species include Organ Mountain chipmunk (federal species of concern, state listed as endangered) and desert bighorn sheep (state listed as endangered).

This area is considered a Scenic ACEC with a Class I VRM designation in the mountainous portions and a Class III or IV designation in the remainder of the area. Three Organ Mountains WSAs have been designated within the ACEC. The ACEC includes two developed recreation sites that are both designated as Watchable Wildlife Areas.

Developed recreational facilities within the ACEC include trail and picnic area development in the Dripping Springs Natural Area, a campground at Aguirre Spring, mountain bike trails, and roads. Recreational activities outside the developed sites include hunting, mountain biking, horseback riding, camping, hiking, picnicking, and wildlife viewing. OHV use is prohibited in the Scenic ACEC portion (8,840 acres) and is limited to designated roads and trails in the remainder of the area. Approximately 20,000 visitor days of use were recorded for the Dripping Springs and Aguirre Spring areas in 1998, and approximately 5,000 visitor days were recorded for the remainder of the ACEC.

Four grazing allotments (Allotment Nos. 15002, 15003, 15006, and 05013) are associated with the Organ Mountain ACEC, with a total grazing allowance of 2,383 AUMs. The area in which grazing occurs changes seasonally as livestock move up and down the mountain. Less than 1% of the allotment consists of riparian habitat, although any of the springs within the ACEC area have privately owned water rights.

Cultural resources include prehistoric and historic sites that are eligible for the National

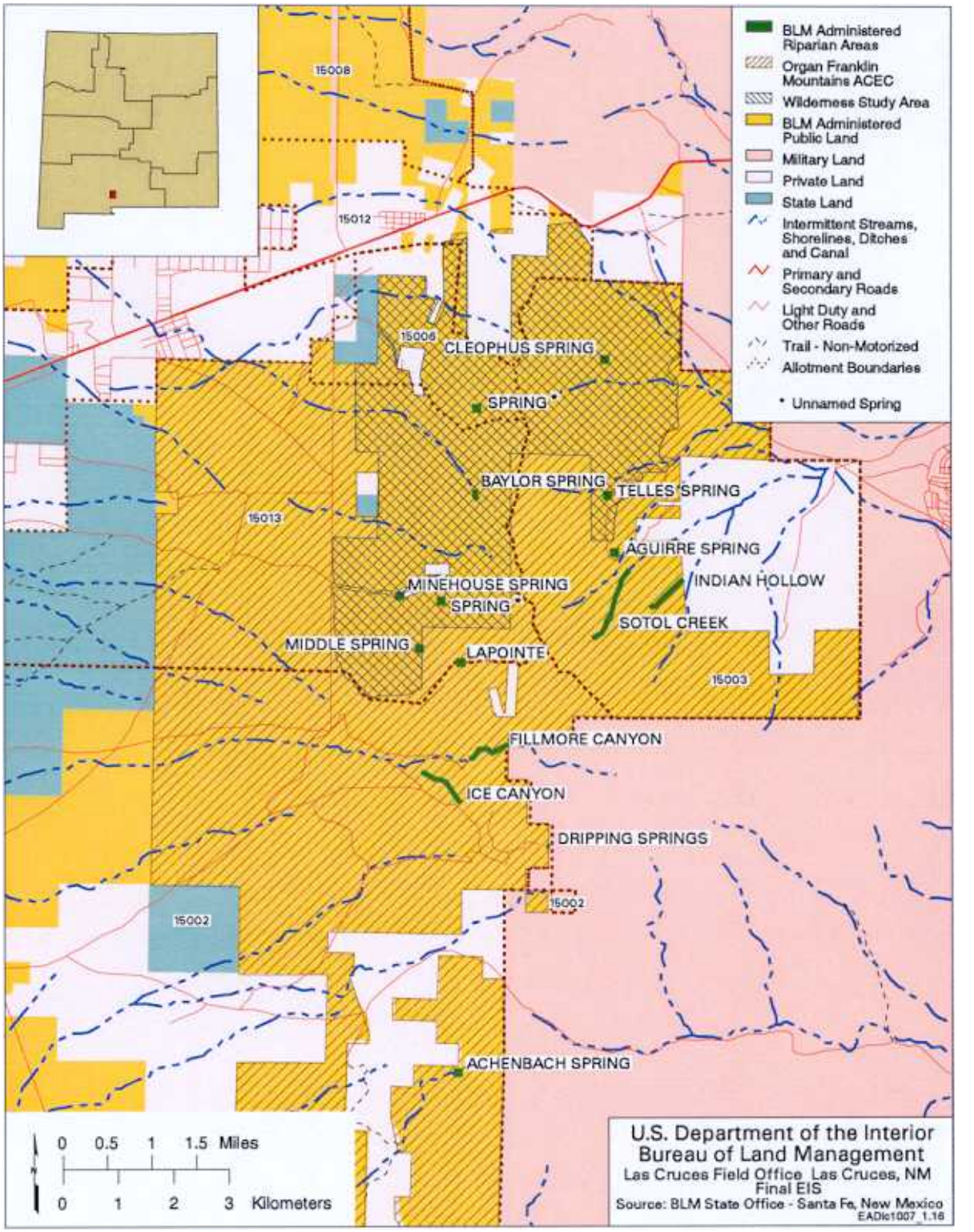

FIGURE 1.16 Organ/Franklin Mountains ACEC Riparian Areas

Register, including La Cueva and Dripping Springs.

Springs occur in some of the canyon bottoms and are associated with a total of approximately 10 acres of riparian habitat. Significant riparian areas include Ice Canyon, Fillmore Canyon, and Indian Hollow. Additional information pertaining to specific riparian areas, based primarily on functional rating surveys, is provided below. All the known springs and riparian areas are within WSAs, except Aguirre Spring. Other riparian areas and springs within the Organ/Franklin Mountains ACEC include Achenbach Canyon, Cox Developments 1 and 2, CRMP-W-20, and Mine House Spring.

Cleophus Spring: The riparian area at Cleophus Spring covers about 0.3 acre. Although grazing is allowed in the vicinity, the riparian area is protected by an exclosure, and a pipeline from the spring in the surrounding allotment (No. 15003) delivers water to a trough outside the exclosure. Few riparian plant species and only a few individual plants of those species were identified during a survey conducted August 22, 1997. The vegetation at this spring consists of great plains falsewillow (no evidence of recruitment) and several facultative species. No excessive erosion or deposition was observed, although there has been some deposition and an increase in the potential to store water. The riparian area was rated as FAR with an upward trend.

Aguirre Spring: The size of the riparian area associated with Aguirre Spring is approximately 0.3 acre. This area is within Allotment No. 15003, and heavy grazing was evident near the spring and an associated watering trough. Observed vegetation included rush (exhibited low vigor), hackberry, and dock. No excessive erosion or deposition has been reported. An evaluation of the Aguirre Spring riparian area was conducted May 1, 1998, and the riparian area was assigned a rating of FAR, with no apparent upward or downward trend. The spring was excluded from livestock grazing in August 1998, although water from the spring is still piped outside the exclosure for livestock.

Recreational uses of the Aguirre Spring Campground include picnicking, camping, hiking, and wildlife viewing. Recreational developments in the vicinity of Aguirre Spring include a campground with 57 units and associated access roads.

Telles Spring: The riparian area associated with Telles Spring covers about 1 acre. This area is within Allotment No. 15003, and heavy grazing by cattle has contributed to compaction and erosion in the vicinity of the spring. No riparian plants were observed, but several large gray oak trees and turpentine bush were located nearby. This location was assigned a rating of NF during a survey conducted May 1, 1998. However, the area could potentially be restored since water from the spring was found to be flowing at a rate of about 0.5 gallon per minute.

Middle Spring: The riparian area associated with Middle Spring is approximately 0.2 acre in size. The riparian-wetland areas associated with this perennial seep are typically saturated. Allotment No. 15013 is associated with this location. Although no grazing was detected at the spring during a 1997 survey, the area is open to grazing. Vegetation observed at this site included several facultative grass species, sedge, baccharis, and hackberry. Forbs appeared vigorous. Woody species did not appear healthy, and there was no evidence of recruitment of woody species. No excessive erosion or deposition was detected. A function rating of FAR, with an upward trend, was assigned during a survey conducted on September 10, 1997. This

site was considered at risk because of the potential for damage from a small amount of grazing disturbance.

LaPointe Spring: The LaPointe Spring riparian area covers about 0.4 acre and is associated with a perennial spring. Standing water was observed at the site during a survey conducted on September 10, 1997. This area is associated with Allotment Nos. 15013 and 15002, and signs of previous disturbance by livestock were evident when the area was surveyed. Vegetation observed included large hackberries, water bent, and facultative species such as littleleaf sumac, pale wolfberry, and whitethorn acacia. (Only water bent was exhibiting vigorous growth.) Bare and scoured out areas were also observed. No ongoing erosion or deposition was noted, although the area has eroded down almost to bedrock in some locations. A rating of FAR, with no apparent upward or downward trend, was assigned to this site.

Indian Hollow: The Indian Hollow riparian area is approximately 0.5 mile long and has a floodplain that is inundated relatively frequently. Vegetation observed during a survey conducted July 8, 1998, included cottonwood, black willow, baccharis, seep willow, indigo bush, hackberry, ash, olney-threesquare, nut sedge, and poplar. There appeared to be good plant density and cover. No excessive erosion or deposition was detected, and although the area is associated with Allotment No. 15003, no evidence of excessive use by livestock was observed. A rating of PFC was assigned.

Sotol Creek: The Sotol Creek riparian area is not developed and consists of a small stream associated with a seep. It is associated with Allotment No. 15003. The allotment has a total preference of 624 AUMs, although no indication of the amount of use of the riparian area by livestock is available. A function rating of FAR, with no apparent upward or downward trend, was assigned in 1993.

Ice Canyon: The Ice Canyon riparian area covers 25 acres and extends for 2 miles along the drainage bottom. The area is lightly developed and excluded from grazing, although it is surrounded by Allotment No. 15002. A function rating of PFC was assigned to this area in 1993.

Dripping Springs: Dripping Springs riparian area is located within the Dripping Springs Natural Area and is surrounded by Allotment No. 15002. Recreational uses of the Dripping Springs Natural Area include hiking, wildlife viewing, outdoor education, and picnicking. Developed recreational facilities include the 1.5-mile Dripping Springs Trail. No riparian functional condition surveys have been completed for this area.

Fillmore Canyon: The Fillmore Canyon riparian area is not developed and consists of approximately 33 acres along 2 miles of stream. This riparian area falls within Allotment No. 15002, which has a total grazing preference of 1,759 AUMs. The degree to which the riparian area is used by livestock is unknown. A rating of FAR, with no apparent upward or downward trend, was assigned in 1993.

1.2.3.5 Placitas Arroyo

The Placitas Arroyo area is in Allotment No. 03064, which is located about 1 mile west of Hatch, New Mexico, south of the Rio Grande (Figure 1.17). The largest portion of the allotment is north of State Highway 26. The Santa Fe Railroad runs through the portion of

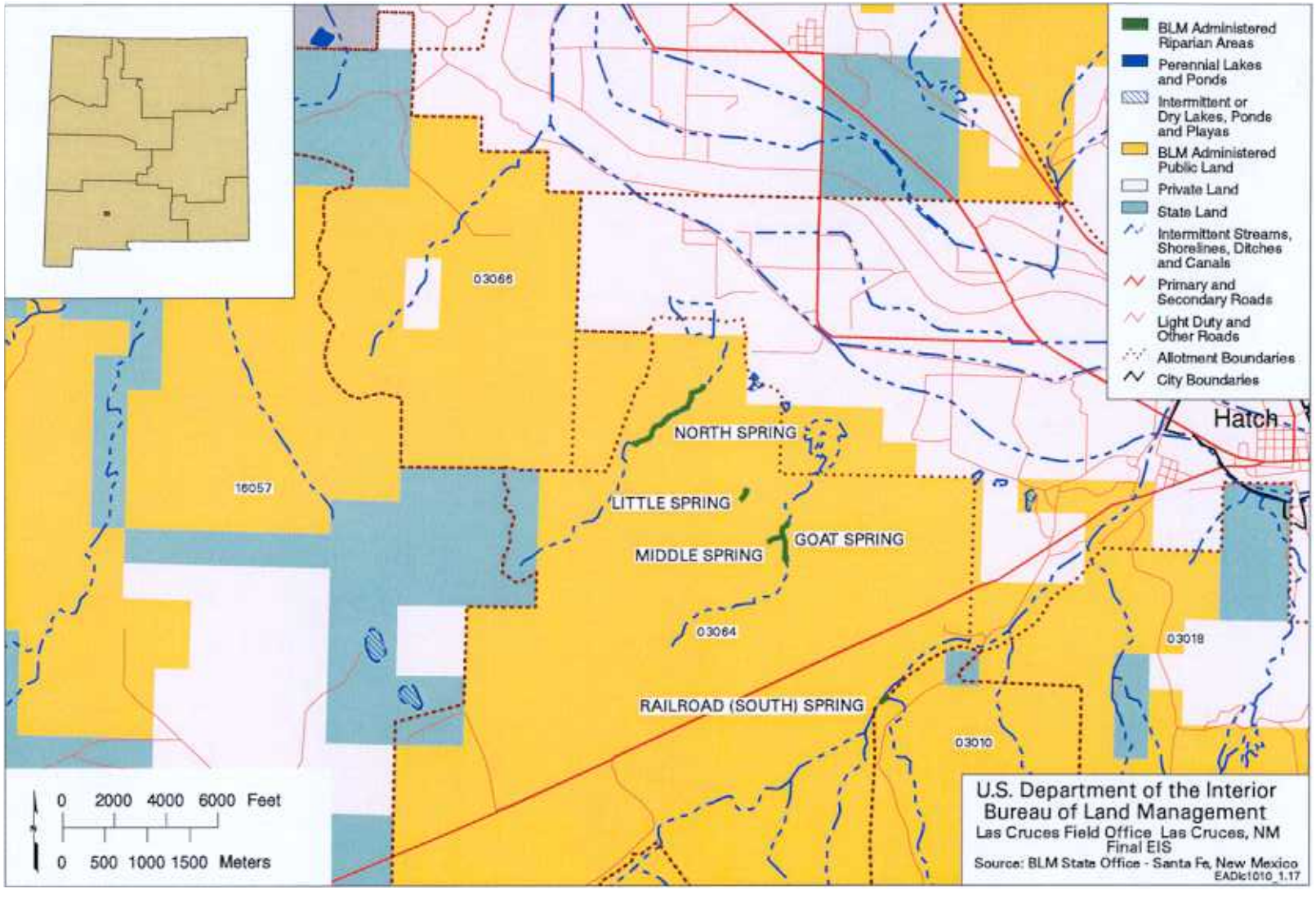

FIGURE 1.17 Placitas Arroyo Area, Showing North, Little, Middle, Goat, and South Springs Riparian Areas

the allotment south of State Highway 26, and the Hatch Airport adjoins the eastern boundary of the allotment. The allotment has a grazing allowance of 484 AUMs, and the allotment management plan calls for rotational use of grazing areas.

On the basis of a soil and vegetation survey conducted in 1978, the allotment was considered to have a low ecological condition. However, potentials for higher range condition and increased vegetation production were identified. Soil erosion was considered critical on most of the allotment. Several riparian areas are associated with springs and seeps located in the allotment and compose less than 1% of the allotment area. These springs are known as North Spring, Little Spring, Middle Spring, Goat Spring, and South Spring. North Spring, Little Spring, and Middle Spring riparian areas are at least partially within exclosures to restrict grazing within these areas. Functional analyses of the various spring areas were conducted between November 1997 and March 1998, and summaries of those analyses are presented below.

North Spring: North Spring is a small (approximately 10 acres) spring-fed riparian area partially protected from grazing by an exclosure. Following a survey conducted November 18, 1997, the portion of the riparian area within the exclosure (approximately 2 acres) was given a rating of FAR with an upward trend. The area was considered to be at risk primarily because of deposition of sediment from upland areas; restoration of the upland area was recommended. The portion of North Spring located outside the exclosure (approximately 8 acres) was assigned a rating of NF, and it was recommended that the entire wet area should be placed inside an exclosure. Vegetation identified during the surveys included saltcedar, baccharis, willow, and cottonwood. However, the survey team believed that additional wetland vegetation, such as sedges, salt grass, and scratch grass, would increase in density if this area was allowed to recover.

Little Spring: The 2-acre Little Spring riparian area was surveyed March 26, 1998, and was assigned a rating of FAR with an upward trend. Vegetation identified during the survey included cottonwood trees and cattails; and the evaluators were not certain whether the area would support a sedge community. The presence of some saline-tolerant species was also noted.

Middle Spring: The 2-acre Middle Spring riparian area in the Placitas Arroyo was surveyed on March 26, 1998, and was assigned a rating of FAR, with a downward trend. The “at risk” designation was based upon down-cutting of the channel in this area because of the lack of aggradation in Goat Springs at the downstream end. Vegetation associated with this location also included saline tolerant species.

Goat Spring: The 3-acre Goat Spring riparian area was also surveyed March 26, 1998. It was assigned a rating of NF. This rating was assigned partially because of trampling of the area by grazing livestock. The survey team believed that if grazing pressure was removed, the area would recover sufficiently to receive an FAR rating. Little evidence was found of recruitment of woody vegetation, and the downstream end of this area consisted of bare sand that had been eroded. The vegetation present consisted of saline-tolerant species.

South Spring: The 2-acre South Spring riparian area was surveyed November 18, 1997, and was assigned a rating of NF. The survey team noted considerable erosion at the seep, a lack of recruitment by woody vegetation

species, and little recruitment by herbaceous vegetation. This condition was attributed to a high degree of trampling by cattle in the riparian area surrounding the spring. Sedges were present, but they were not growing well. It was recommended that this riparian area be protected from livestock.

1.2.3.6 Uvas Mountains

The only riparian area in land under BLM jurisdiction in the Uvas Mountains area is at Hackler Spring.

Hackler Spring: Hackler Spring (Figure 1.18) is a 0.1-acre lentic riparian-wetland area. This area falls within Allotment No. 03027, and much evidence was seen of disturbance from livestock and machinery during a riparian survey conducted February 24, 1998. No riparian vegetation was observed, and a considerable amount of erosion was noted. An existing exclosure was rebuilt in April 1999. This area was assigned a rating of NF, although it was considered to have some potential for recovery.

1.2.3.7 Little Hatchets

Hole in the Wall Spring: Hole in the Wall Spring (Figure 1.19) is a 0.1-acre lentic riparian-wetland area that is saturated or inundated relatively frequently. This area is within Allotment No. 02045. Vegetation observed at this area included cottonwood, hackberry, oak, soapberry, Apache plume, and graythorn, although no tree recruitment was evident. The area was assigned a rating of NF during a survey conducted November 5, 1997. Smaller trees and other vegetation showed evidence of excessive browsing, although it was unclear from the survey whether this browsing was by grazing livestock or wildlife.

Bobcat Spring: Bobcat Spring (Figure 1.19) is a 0.1-acre lentic riparian-wetland area. It is located within Allotment No. 02045, and it was speculated during a survey conducted November 5, 1997, that grazing at the spring was responsible for limiting the establishment of riparian vegetation. Vegetation observed during the survey included baccharis (the only riparian species), one-seed juniper, and possibly mountain muhly. Very little soil was present near the spring, and bedrock, gravel, and sand were present behind the seep. A rock/mortar dam had washed out and much of the area is now eroded to bedrock. A rating of NF was assigned on the basis of the survey observations.

Russell Mine Spring: Russell Mine Spring (Figure 1.19) is a 0.1-acre lentic riparian-wetland area. This area is within Allotment No. 02045 and supported mining activity in the past. Removal of soil from the bottom of the upstream canyon during mining may have been detrimental to the functioning of this riparian area. Vegetation observed at this location included several species of grass, soapberry, willow, and hackberry. Currently, the site is mostly bedrock; any hydric soil was probably lost during past mining activities. A rating of FAR, with no apparent upward or downward trend, was assigned as a result of the survey conducted November 5, 1997.

Livermore Spring: Livermore Spring (Figure 1.19) is a 0.1-acre lentic riparian-wetland area. This seep is located within Allotment No. 02044. No detrimental effects of grazing were identified during a survey conducted November 5, 1997, but an overflowing water trough was dewatering two

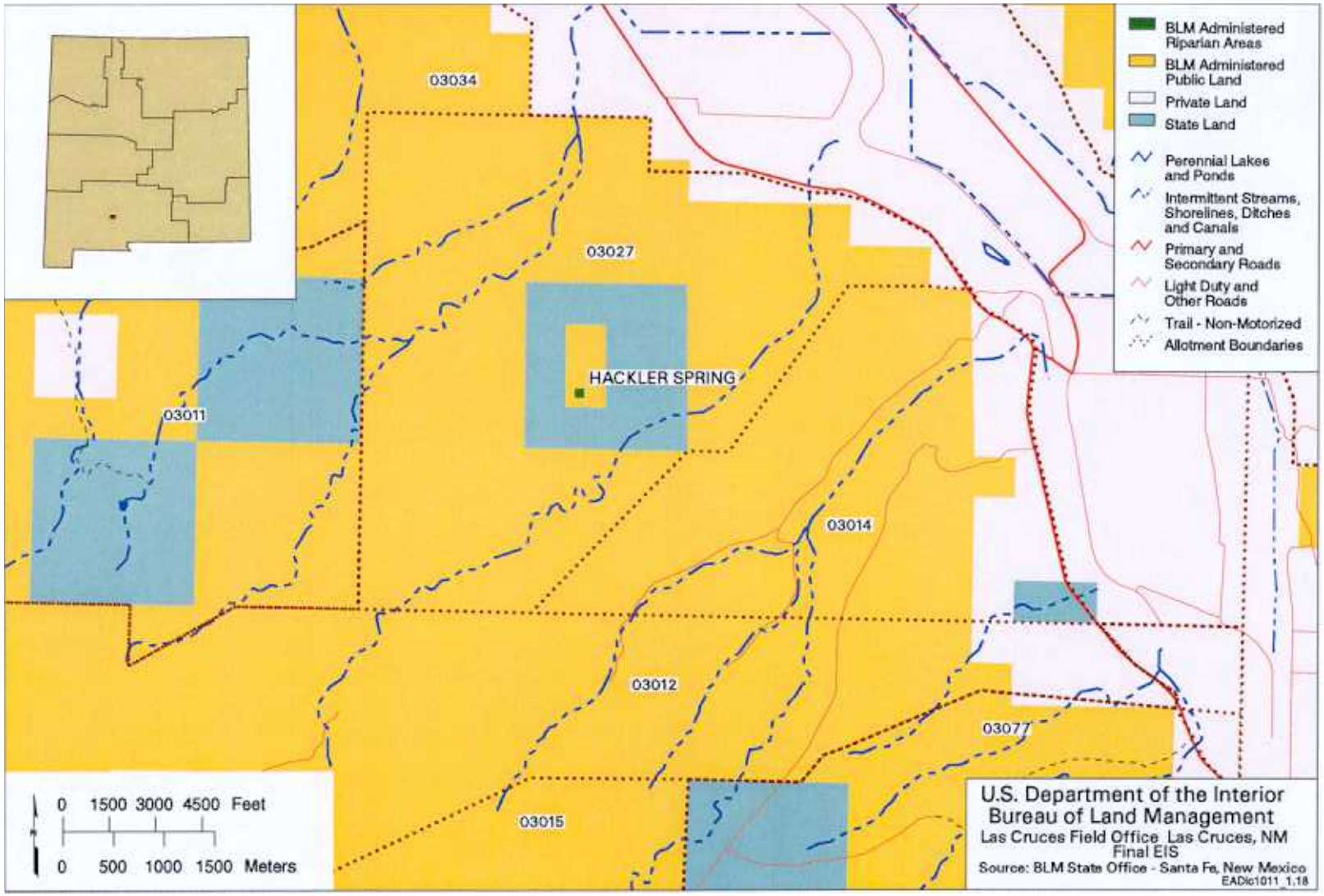

FIGURE 1.18 Uvas Mountains and Hackler Spring Riparian Area

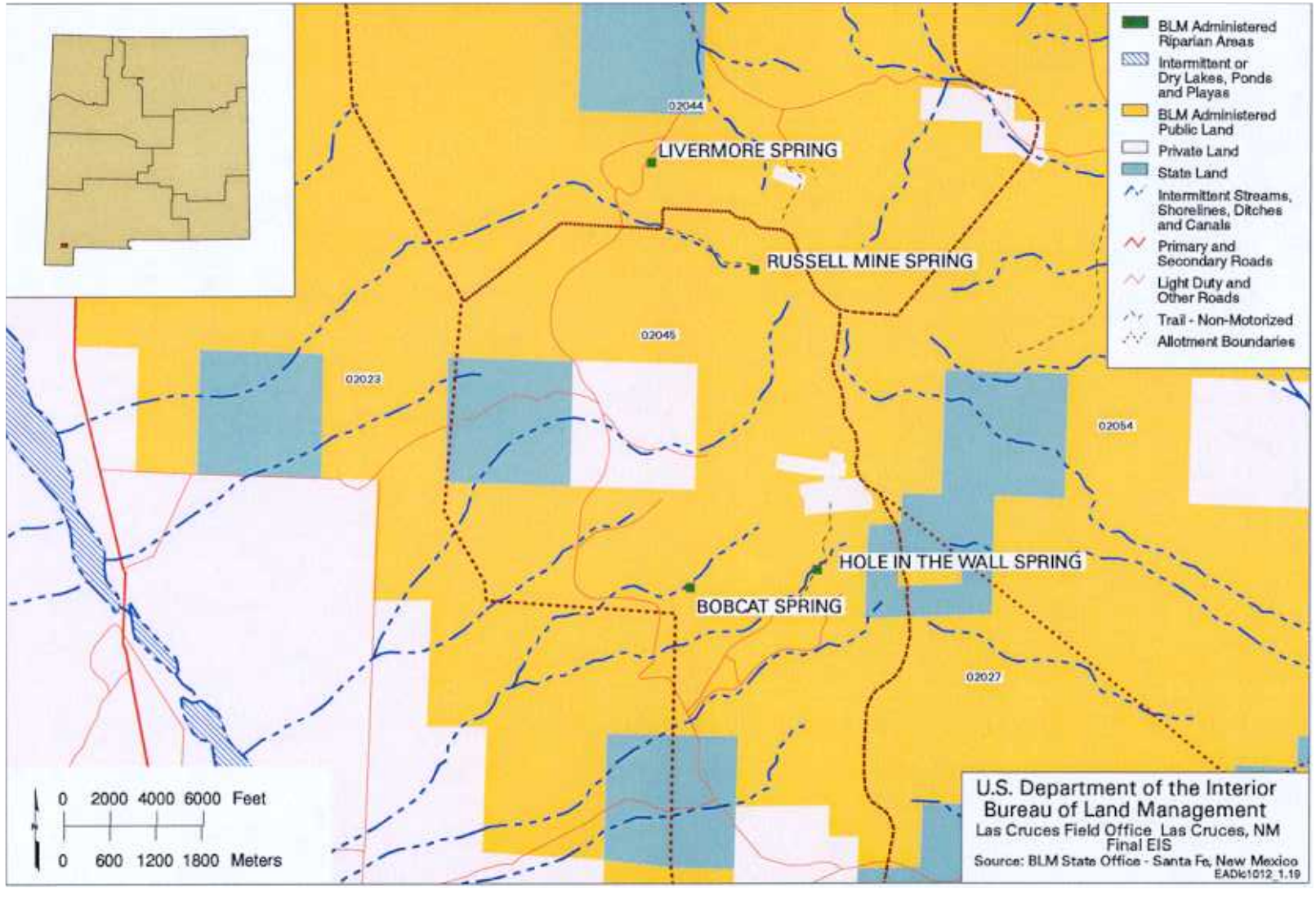

FIGURE 1.19 Little Hatchet Mountains and Hole in the Wall, Bobcat, Russell, and Livermore Springs Riparian Areas

potential riparian areas. Considerable mining has occurred in the vicinity, but no adverse effects were noted during the survey. Vegetation identified included hackberry. Much evidence of erosion and bank cutting was observed during the survey, and it was speculated that hydric soil was dug or washed out long ago. A rating of NF was assigned to this area.

1.2.3.8 Near Gila Lower Box

Box Canyon: Box Canyon (Figure 1.7) contains 0.25 mile of lotic floodplain area. This area is located within Allotment No. 01078. No evidence of excessive grazing was noted during a survey of the area March 20, 1998. However, vegetative cover was found to be spotty, and no riparian plant species were identified. No evidence of excessive erosion was noted. The evaluators felt that improvement of vegetation in upland areas would decrease the intensity of flows, thereby allowing deposition of sediment and colonization by riparian vegetation. A functional rating of FAR, with an upward trend, was assigned. This riparian area is within the Gila Lower Box WSA/ACEC.

Nichols Spring: Nichols Spring (Figure 1.7) is a 0.2-acre lentic riparian-wetland area. This riparian area is located within Allotment No. 01078, and evidence of disturbance from trampling by livestock was reported even though an exclosure fence was present. It appears that mining may also have occurred nearby in the past. A survey conducted March 19, 1998, resulted in a rating of PFC. Flow from the spring during the survey was approximately 0.4 gallon per minute. High velocity and volume runoff events in Nichols Canyon will probably scour the small riparian area associated with the spring, thus limiting the potential of this area. The small amount of vegetation observed during the survey included baccharis and grasses, but no trees.

1.2.3.9 Pyramid Mountains

Rockhouse Spring: Rockhouse Spring (Figure 1.20) is a small perennial seep associated with a small riparian-wetland area. This area is in Allotment No. 01050 and has not been developed. Multiple cow trails and heavy use of the area around the spring by livestock were observed during a survey conducted September 11, 1997. No riparian vegetation was present during the survey, only rock and sand around the seep. However, one-seed juniper, oak, silktassle, and upland or facultative grasses and forbs were present nearby. This area contains a high density of cultural sites. A functional rating of FAR, with no apparent upward or downward trend, was assigned to this riparian area.

1.3 RELEVANT CONSTRAINTS

Various laws, policies, program guidance, and management plans that apply to preparation of this HMP include, but are not limited to, the following:

- The Membres RMP (BLM 1993b), including all relevant decisions affecting actions and developments in riparian areas;
- Executive Order 11988 - Floodplain Management (May 24, 1977);
- Executive Order 11990 - Protection of Wetlands (May 24, 1977);
- The Taylor Grazing Act, which directs the Secretary of the Interior to stop injury to the public lands by

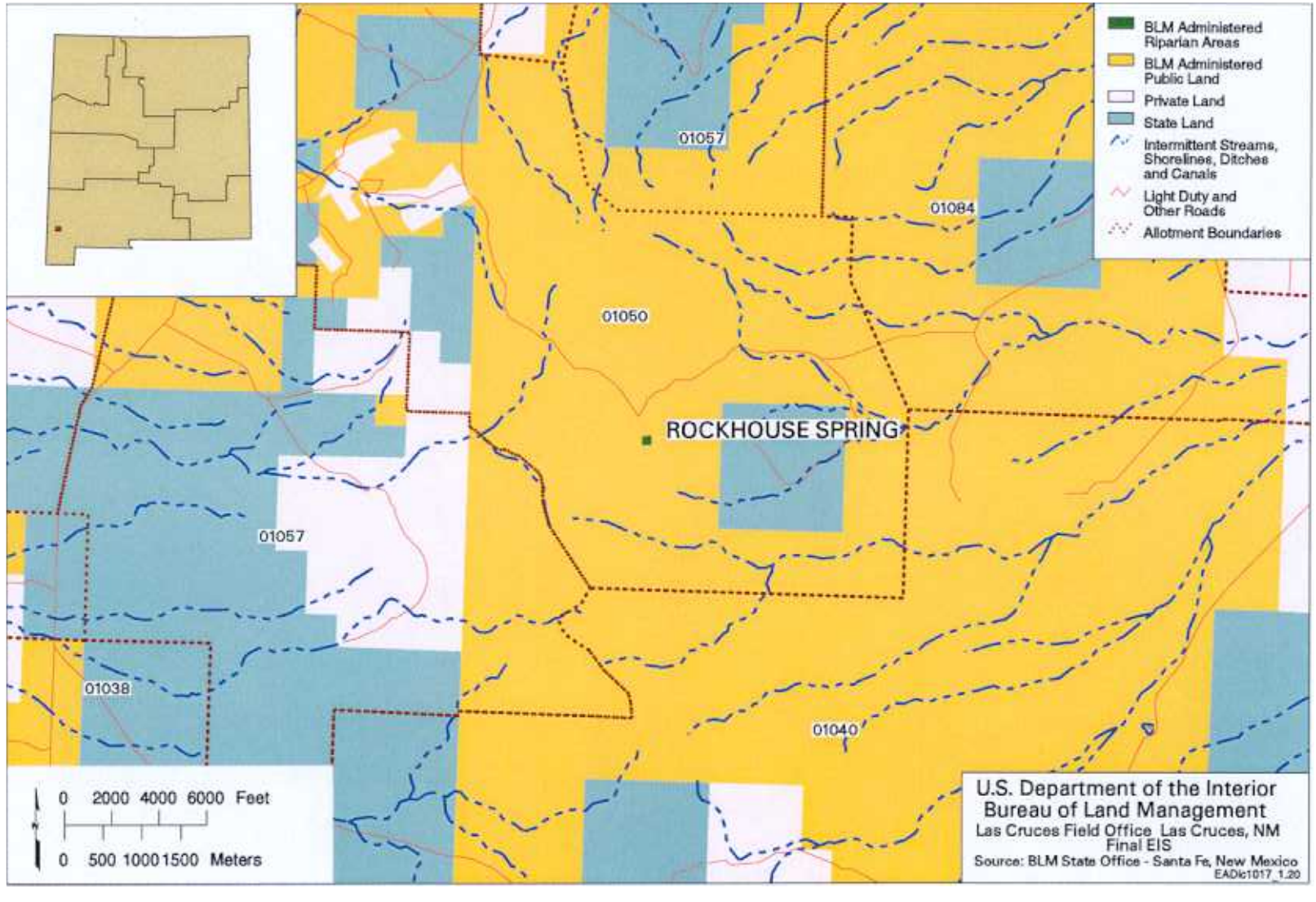

FIGURE 1.20 Rockhouse Spring Riparian Area

preventing overgrazing and soil deterioration;

- The Federal Land Policy and Management Act, which requires that the public lands be managed in a manner that will protect the quality of ecological, environmental, and water resources and that will, where appropriate, preserve and protect certain public lands in their natural condition to provide food and habitat for fish and wildlife;

- The Public Rangelands Improvement Act, which directs improvement of rangeland conditions;

- The Clean Water Act, which has as objectives the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water at a level of quality that provides protection for fish, shellfish, wildlife, and recreational use;

- The Endangered Species Act, which specifies consultation with the USFWS regarding actions that could affect federally listed threatened or endangered species of plants and animals;

- Department of the Interior and BLM policy to maintain, restore, or improve riparian-wetland ecosystems to achieve a healthy and PFC that assures biological diversity, productivity, and sustainability;

- *BLM Manual Transmittal Sheet: 1737 – Riparian-Wetland Area Management* (BLM 1992c); and

- BLM Technical References (TRs) on Riparian Area Management 1737-3 and 1737-5 through 1737-15 (BLM 1989a; 1990; 1992b,d; 1993a,c; 1994a,b; 1996a,b; 1997a; 1998a).

1.4 SIKES ACT AUTHORITY

This HMP has been written to meet the requirements of the Sikes Act (Public Law 93-452) and will be implemented under the authority of the Sikes Act. This plan has been developed to meet the policies and guidance outlined in the Memorandum of Understanding (MOU) between the BLM and the New Mexico Department of Fish and Game (NMDG&F) (MOU-NM-232 [1990]) and the Cooperative Agreement among the U.S. Department of Agriculture Forest Service, the NMDG&F, and the BLM (Agreement No. 14226910A980006 [1998]).

2 LAND STATUS AND ADMINISTRATION

2.1 LAND STATUS

The distribution of BLM-administered riparian areas and the status of land jurisdiction throughout the Las Cruces Field Office are shown in Figure 1.4.

2.2 ADMINISTRATION

Information related to BLM-administered riparian areas in the Las Cruces Field Office is provided in Table 2.1. In addition, the table provides a description of the site-specific management actions and general management plans appropriate for each of the riparian areas considered in this HMP.

TABLE 2.1 Las Cruces Field Office Riparian Areas

Riparian Area	Length [miles] (Area [acres])	Type	Current Use	Threatened and Endangered Species[a]	Condition (Date)[b]	General Management Plans[c]
Apache Box	1.5 (18)	Perennial stream	No grazing	Occupied	FAR - U	1
Bear Creek	1.25 (20)	Perennial stream	No grazing		NF	1, 2
Blue Creek						
Segment 1	(16)	Semiperennial stream	Grazing		NF	1
Segment 2	(14)	Semiperennial stream	No grazing		FAR - U	1, 2
Gila Lower Box						
Upstream of Gap Fence	(51)	River	Grazing allowed, but largely restricted by topography		PFC (1997)	1, 2, 3
Nichols Area	(45)	River	Recreation	Currently potential SWF habitat	PFC (1997)	1, 2, 3
The Box	(270)	River	Wildlife viewing, camping, picnicking, hunting, fishing, kayaking, and swimming	Occupied by SWF, loach minnow, spikedace; historic habitat for Chiricahua and lowland leopard frogs	PFC (1997)	1, 2, 3
Downstream of the Box	(34)	River	Grazing; water used for irrigation		NF (1997)	1, 3
Gila Middle Box	2.5 (30)	River	No grazing	Loach minnow; spikedace; historic habitat for Chiricahua and lowland leopard frogs	PFC (1997)	1
Owl Canyon	1.1 (18)	Intermittent stream	Grazing excluded		PFC (1997)	1
Cooke's Range ACEC						1
Frying Pan Spring	(0.2)	Spring	Unknown		FAR - NA	1
Moonshine Spring	(0.2)	Spring	Unknown		FAR - NA	1
Riley Spring	(0.2)	Spring	Unknown		FAR - NA	1
Cowboy Spring ACEC						
Cowboy Spring	-[d]	-	-	-	-	1
Elephant Butte Canyon	Unknown	Unknown	Unknown	Historic habitat for Chiricahua leopard frog	NR	1

TABLE 2.1 (Cont.)

Riparian Area	Length [miles] (Area [acres])	Type	Current Use	Threatened and Endangered Species[a]	Condition (Date)[b]	General Management Plans[c]
Lawhorn Canyon	Unknown	Unknown	Unknown	Historic habitat for Chiricahua leopard frog	NR	1
Florida Mountains ACEC						
Indian Spring	(0.2)	Spring			NF (1996)	1
Byer Spring	(0.2)	Spring	Grazing		FAR - NA (1998)	1
Burnt Spring	(0.5)	Spring	Grazing allowed, but largely restricted by topography		PFC (1998)	1
Grapevine Spring	(0.1)	Perennial seep	Grazing excluded		PFC (1998)	1
Spring Canyon Seep	(2)	Intermittent spring	Grazing allowed, but largely restricted by topography		PFC (1998)	1
Upper May Spring	(0.1)	Intermittent seep	Grazing allowed, but largely restricted by topography		PFC (1998)	1
South Canyon Spring	Unknown	Unknown	Unknown		NR	1
Organ/Franklin Mountains ACEC						1, 4
Achenbach Canyon	Unknown	Unknown	Grazing		NR	
Cleophus Spring	(0.3)	Spring	Grazing excluded		FAR - U (1997)	1
Aguirre Spring	(0.3)	Spring	Grazing excluded; picnicking, camping, hiking, and wildlife viewing		FAR - NA (1998)	1
Cox Development 1	Unknown	Unknown	Heavy grazing		NR	
Cox Development 2 (Baylor Spring)	Unknown	Unknown	Unknown		NR	
CRMP-W-20	Unknown	Unknown	Unknown		NR	
Telles Spring	(1)	Spring	Heavy grazing		NF (1998)	1
Middle Spring	(0.2)	Perennial seep	Grazing excluded		FAR - U (1997)	1
Mine House Spring	Unknown	Unknown	Grazing		NR	
LaPointe Spring	(0.4)	Perennial spring	Grazing excluded		FAR - NA (1997)	1
Indian Hollow	0.5	Stream	Grazing		PFC (1998)	1

TABLE 2.1 (Cont.)

Riparian Area	Length [miles] (Area [acres])	Type	Current Use	Threatened and Endangered Species[a]	Condition (Date)[b]	General Management Plans[c]
Sotol Creek	(8)	Seep	Grazing		NR	
Fillmore Canyon	2 (33)	Stream	Grazing		FAR - NA (1993)	1
Ice Canyon	2 (25)		Grazing excluded		PFC (1993)	1
Dripping Springs			Grazing excluded; hiking, wildlife viewing, outdoor education, and picnicking		NR	1
Placitas Arroyo						
North Spring	(10)	Spring	Grazing (excluded from 2-acre portion)		FAR - U, within exclosure; NF outside (1997)	1, 5
Middle Spring	(2)	Spring	Grazing excluded		FAR - D (1998)	1, 5
Little Spring	(2)	Spring	Grazing excluded		FAR - U (1998)	1, 5
Goat Spring	(3)	Spring	Grazing		NF (1998)	1, 5
South Spring	(2)	Spring	Grazing excluded		NF (1997)	1, 5
Uvas Mountains						
Hackler Spring	(0.1)	Spring	Grazing excluded		NF (1998)	1
Little Hatchets						
Hole in the Wall Spring	(0.1)	Spring	Grazing allowed		NF (1997)	1
Bobcat Spring	(0.1)	Spring	Grazing		NF (1997)	1
Russell Mine Spring	(0.1)	Spring			NF (1997)	1
Livermore Spring	(0.1)	Seep	Grazing allowed		NF (1997)	1
Near Gila Lower Box						
Box Canyon	0.25 (3)	Interrupted stream	Grazing allowed		FAR - U (1998)	1
Nichols Spring	(0.2)	Spring	No Grazing		PFC (1998)	1
Pyramid Mountains						
Rockhouse Spring	(0.2)	Perennial seep	Grazing		FAR - NA (1997)	1

TABLE 2.1 (Cont.)

Riparian Area	Length [miles] (Area [acres])	Type	Current Use	Threatened and Endangered Species[a]	Condition (Date)[b]	General Management Plans[c]
Lordsburg Playa	(8,000)	Ephemeral playas	Recreation and grazing		NR	1
Isaack Lake	(29)	Ephemeral playa	Grazing		NR	1
San Luis Lake	(200)	Ephemeral lake/wetland	Grazing		NR	1

[a] SWF = southwestern willow flycatcher.

[b] FAR - D = functional – at risk, downward trend; FAR - NA = functional – at risk, trend not apparent; FAR - U = functional – at risk, upward trend; NF = nonfunctional; NR = not yet rated.

[c] 1 = *Mimbres Resource Management Plan* (BLM 1993b).

2 = *Southwestern Willow Flycatcher Habitat Management Plan* (BLM 1998b).

3 = *Gila River Coordinated Resource Management Plan* (CRMP) (BLM 1985).

4 = *Organ Mountains CRMP and Decision Record* (BLM 1989b).

5 = *Coordinated Management Plan for Placitas Arroyo Allotment No. 03064* (BLM 1992a).

[d] A hyphen indicates that currently no functional evaluation has been performed.

Source: BLM field data files.

3 HABITAT MANAGEMENT

3.1 APPROACH

This HMP combines the structural components of BLM Guidance Manual 6780 (BLM 1981) with Alternative 1, Current Management, of the DEIS (BLM 1999) to develop the management approach, planned actions, evaluation and monitoring, and HMP progress reporting contained in BLM Guidance Manual 6780. Specific information related to individual riparian areas from BLM files as well as from comments received on the analysis in the DEIS were used. Current management has already restored many of the riparian areas by either removing domestic livestock from them completely or during the growing season, as well as by implementing other management practices. The BLM Riparian Area Management TR Series 1737 was used, where appropriate, to provide technical guidance on the field activities required to implement the HMP. For example, TR 1737-14, *Grazing Management for Riparian-Wetland Areas* (BLM 1997a), provides specific information on the probable response of brushy species regrowth potential to different grazing strategies.

By using the current management activities contained in Alternative 1 and specific field activity and guidance, the HMP provides a road map for achieving specific desired future conditions for all riparian habitats that occur within the Las Cruces Field Office. However, like all road maps, the HMP allows BLM staff to respond to changes as new information is developed and there is a need to adjust to new conditions (directions).

3.2 MANAGEMENT OBJECTIVES

The principal management objectives of this HMP are to maintain, restore, improve, protect, and expand riparian areas within lands administered by the Las Cruces Field Office in four counties in New Mexico (Grand, Hidalgo, Luna, and Doña Ana) so that they are in PFC for their productivity, biological diversity, and sustainability. The objectives will be achieved when all of the designated riparian areas are in PFC, and all threatened and endangered species habitat requirements have been completed.

3.3 PLANNED ACTIONS

The current plans and activities for the Las Cruces Field Office derive from those aspects of BLM policy and guidance for riparian-wetland area management that seek to protect riparian and aquatic habitats from potential adverse effects from other authorized uses of the land (BLM 1992b). Within the Las Cruces Field Office, the policy and guidance are usually applied in the form of stipulations or conditions of approval for other uses that are authorized for the public lands. For example, livestock grazing may be limited by location, season of use, or numbers of animals to protect riparian habitats; mineral developers may be precluded from locating facilities in or adjacent to riparian areas; and utility right-of-ways may be excluded or required to avoid any activities that would impair riparian function. In addition, authorization for other uses of the land may require actions such as water development, vegetation manipulation, bank stabilization, or other measures to restore or protect aquatic and riparian habitats as a condition of approval. Finally, current management may also undertake actions specifically designed to restore or protect riparian habitats as a specific Las Cruces Field Office initiative. For example, field inventories have been conducted to determine the condition of riparian habitats, and specific vegetation control and management have been completed under the current budget priorities and staffing levels.

Fifteen resource management programs are identified in the Mimbres RMP (BLM 1993b), including a resource management program specifically directed at riparian and aquatic habitat. Resource management programs and activities that will guide current and future riparian management activities within the Mimbres RMP area include the following:

- The goal of the riparian management program is to achieve a healthy and productive ecological condition for public land riparian areas. The following are among the more notable continuing management guidance and actions for riparian areas as identified in the RMP:
  - Riparian areas will not be disposed of through sale or exchange unless such an action is in the public interest.
  - Suppression of wildfire in riparian habitats will have a high priority unless fire is a natural part of the ecosystem. Riparian areas that have burned will be rehabilitated as necessary through protection, reseeding, or planting.
  - Grazing management practices will be designed and established to meet riparian and water quality needs in the development of new allotment management plans (AMPs) and in the revision of existing AMPs. When management systems alone cannot meet objectives, provisions for fencing or other means of exclusion will be utilized. No livestock-related activities, such as salting, feeding, and construction of holding facilities and stock driveways, will be allowed within riparian zones unless specifically authorized.
  - Construction activities that would remove or destroy riparian vegetation will be avoided.
  - Minerals management actions and special stipulations or conditions will be designed to be compatible with riparian habitat management goals. Riparian buffer zones will be identified and provided for in the exploration and development of mineral resources.
  - No vegetation treatments will be undertaken in the riparian areas using herbicides except for selected treatment of nonnative species (e.g., saltcedar).
  - All new spring developments will be designed to protect riparian areas, while selected existing spring developments will be modified for the same reason.
  - Throughout the area, riparian habitat management will continue to be coordinated with other programs and activities as needed. Specific programs include range, wildlife, watershed, recreation, and lands. Riparian habitat values will be addressed in all surface- and vegetation-disturbing actions. Riparian areas will have a higher priority for funding, management, and protection than arroyo habitats.
- Although most of the public land in the portion of the Las Cruces Field Office area considered in this HMP is available for mineral entry, restrictions are in

place on leasable, locatable, and salable mineral activities within selected areas. For example, all ACECs and RNAs are closed to fluid mineral leasing and to salable mineral activities, including those identified as containing riparian areas. In addition, the Apache Box and Organ/Franklin Mountains ACECs have been petitioned for withdrawal from locatable mineral entry. Additional protection is afforded riparian areas and, therefore, adjacent aquatic areas by requiring that such areas not be disturbed during locatable, salable, or leasable mineral entry on public land.

- The lands program seeks to facilitate the acquisition, exchange, or disposal of public land in order to provide the most efficient management of public resources. Riparian areas within ACECs and RNAs are protected from disposal and are excluded from development of new right-of-ways.

- The access program pursues ways to enhance access to and across public land in a manner that is compatible with the protection of sensitive resource values. The Mimbres RMP identified 19 areas where access was to be developed by building new roads, adjusting land ownership, or acquiring easements, including areas containing riparian habitat. Specifically, acquisition of legal public or administrative access is to be developed for the Cowboy Spring ACEC, Apache Box ACEC, Bear Creek ACEC, Cooke's Range ACEC, Florida Mountains ACEC, Gila Lower Box ACEC, Gila Middle Box ACEC, Little Hatchet Mountains, Organ Mountains ACEC, Owl Canyon, and Rockhouse Canyon.

- The livestock grazing program uses monitoring studies to monitor long-term rangeland ecological conditions and trends and to determine whether desired plant community goals are being attained. The Mimbres RMP calls for the establishment of monitoring studies on all allotments where conditions are deemed unsatisfactory and can be economically improved. The intensity and frequency of monitoring depends upon the initial conditions of the allotment. Allotments where conditions are unsatisfactory and can be economically improved are monitored at a greater intensity than allotments where conditions are currently satisfactory. If monitoring studies indicate a decline in condition, active grazing preferences or current livestock management practices can be changed. The livestock grazing program uses fencing to exclude cattle and spring development to provide water sources outside riparian areas when such actions are deemed appropriate.

- The vegetation management program develops activities to maintain a desired plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for each site. As presented in the Mimbres RMP (BLM 1993a), the desired plant community for riparian areas consists of 30 to 80% grass or grasslike species, 40 to 60% woody vegetation, and 30 to 60% forbs.

- The wildlife program endeavors to improve, enhance, and expand wildlife habitat on public land for both

consumptive and nonconsumptive uses, as well as for maintaining biological diversity. Before activities are authorized in riparian areas, consideration is given to avoiding or minimizing disturbance to wildlife within 500 feet of riparian areas throughout the year. In addition, new fences are built to allow for wildlife passage, and wildlife escape devices are installed on all new or existing water tanks or troughs within the Mimbres RMP area. The Gila Lower Box and the Gila Middle Box were designated as ACECs in order to protect special status wildlife species and riparian habitat.

- The recreation program develops projects to enhance opportunities for developed and undeveloped recreation on public land. Portions of some ACECs that contain many of the primary riparian areas and springs or seeps, as well as the Lordsburg Playa RNA, are closed to OHV use. Other management decisions that affect recreational use of riparian areas in ACECs include a ban on shooting in the Apache Box ACEC from February 1 to August 15 each year, and closure of the Cooke's Range ACEC to fuelwood collection.

- The Wilderness Program entails management of 20 areas totaling approximately 500,000 acres to maintain natural conditions and ecosystem function. Riparian areas in the Apache Box, Blue Creek, Cooke's Range, Cowboy Spring, Florida Mountains, Gila Lower Box, Organ Mountains, Peloncillo Mountains (including Owl Canyon), and Uvas Mountains are mostly within WSAs.

- The special status species program gives priority to the protection and management of habitat for known populations of federal- or state-listed species, to prevent listing of federal candidate species, and to assist in the recovery of listed species. Management goals for special status species were included in the ACEC, designations for the Apache Box ACEC, Gila Lower Box ACEC, Gila Middle Box ACEC, and Organ/Franklin Mountains ACEC.

The *Southwestern Willow Flycatcher Management Plan* (BLM 1998b) describes the background and history of the southwestern willow flycatcher and outlines the various tasks that need to be accomplished to protect, improve, or reestablish this species and its nesting and foraging habitat on BLM public land. The plan directs implementation of the "reasonable and prudent alternatives" in the Biological Opinion issued by the USFWS (1997) on the Mimbres RMP. Specific actions directed in the plan include:

- Elimination of a planned action to allow livestock to be used as a vegetation management tool in the Gila Lower Box ACEC;

- Development of maps that convey the location, size, shape, and spacing of habitat patches suitable for southwestern willow flycatcher;

- Prioritization of the areas to be surveyed for southwestern willow flycatcher;

- Surveys of occupied and potential habitat on public land in the Gila Lower Box ACEC;

- Monitoring of flycatcher nests to determine nest success and rates of nest parasitism by brown-headed cowbirds;

- Initiation of a trapping program for brown-headed cowbirds if nest parasitism reaches or exceeds 10% of a given year's southwestern willow flycatcher nests; and

- Identification of livestock concentrations within a 5-mile radius of occupied flycatcher habitat in order to identify likely foraging areas for brown-headed cowbirds.

The Placitas Arroyo Coordinated Management Plan (CMP) (BLM 1992a) was prepared to find ways to solve resource conflicts on Allotment No. 03064. This allotment showed a very low ecological range condition and trend rating during a survey conducted in 1978. Soil erosion had been rated critical on most of the allotment. A series of springs and seeps on the allotment (see Section 3.4.5 of the DEIS [BLM 1999]) were in degraded condition, and the allotment was designated a riparian area improvement showcase for the Las Cruces Field Office.

Applicable stipulations in the management plan include:

- Site-specific threatened and endangered species and cultural clearances will be conducted for all surface-disturbing actions, as necessary, before implementation.

- The Placitas Arroyo CMP will be made a term and condition of the grazing permit. The plan may be amended or modified through the consultation of all parties concerned. The plan applies to base property, lessees, heirs, assignees, and transferees.

- Minimal clearance of vegetation along all pipelines and fences will occur.

- No new roads will be constructed with the exception of a road on the pipeline route across the mesa. The road will be water barred where needed to reduce erosion.

- All storage tanks and water troughs will be painted to blend into the surrounding vegetation type. All water troughs will be equipped with bird ramps.

- All fences will be type "A" fences with all green posts. The wire spacing will be 16, 6, 8 and then 12 inches from the ground up. Total height is not to exceed 42 inches. The bottom wire will be smooth and the top will be barbed.

- The smaller exclosures — North Spring, Little Spring, and Middle Spring — will be closed to livestock grazing. The proposed North Spring expansion and the proposed Goat Spring exclosure will be open to grazing from October 1 through March 31 each year.

The Organ Mountains Coordinated Resource Management Plan (BLM 1989b) addresses specific needs and actions for threatened and endangered species, wildlife habitat, rangeland resources, cultural resources, and recreation on BLM public land in the Organ Mountains. Guidelines provided for improving the management of riparian areas include construction of trails outside riparian areas when possible; closing portions of land in the Organ Mountains to mineral entry; building exclosures and developing 12 springs and their associated riparian areas to exclude grazing by livestock; implementing grazing systems to provide growing season rest to riparian areas; and prohibiting overnight camping in back-country areas with riparian zones.

3.4 EVALUATION AND MONITORING

The Las Cruces Field Office will implement the HMP model by systematically applying the set of riparian management guidelines that were developed in the Mimbres RMP (BLM 1993b). Within the framework of a set of policies and actions developed in the RMP, specific riparian plans address the site-specific characteristics of each individual riparian area. Since each riparian area is composed of a unique set of hydrological, ecological, soil, and human use characteristics, the RMP outlines the range of management strategies to achieve and maintain PFC and to restore and protect threatened and endangered species habitat. Because the HMP includes an active monitoring program, the site-specific ecosystem dynamics that control the natural functions of each riparian area are periodically measured to ensure that stewardship goals are being achieved. In addition, since planned management actions are the outcome of a set of policies that seek to protect and enhance riparian habitat, specific actions can be modified in order to maintain and or restore the necessary ecological and hydrological properties of each riparian area.

Table 3.1 shows the set of planned management and monitoring actions that the Las Cruces Field Office will undertake for each riparian area. Past and ongoing management actions in combination with the most recent survey data for each riparian area provide the context for the planned management actions. In addition, if riparian areas contain current or potential habitat conditions for threatened and endangered species, planned management actions have been designed to protect and enhance habitat for these species, especially as these actions relate to establishing vegetation communities that could support southwestern willow flycatchers. Indeed, a key objective of the planned management actions is the need to restore and maintain riparian vegetation conditions.

The tasks and activities described in Table 3.1 were derived from the following set of riparian policy guidelines contained in the Mimbres RMP (BLM 1993b).

Retain Public Land: This management action consists of retaining all existing public land under BLM jurisdiction as well as acquiring all adjacent state trust and private land in holdings through exchange or purchase at fair market value from willing landowners.

Closed to Vehicles: Motorized vehicles are not authorized in or adjacent to riparian areas except for limited use on designated existing roads and trails.

Closed to Mineral Entry: The land associated with the riparian area is not available for activities or operations under the General Mining Law of 1872, and is, therefore, protected from the effects of prospecting, mining claim development, mineral patents, and related actions.

Closed to Mineral Leasing: The land is excluded from mineral leasing to protect the riparian area from development associated with the exploration and production of leasable minerals such as oil and gas.

Closed to Mineral Sales: Mineral sales that would allow the disposal of mineral materials such as sand, gravel, and building stone are not authorized. Riparian areas are protected from the effects of activities that would be associated with the extraction of mineral materials.

TABLE 3.1 Current and Planned Management Tasks for Each of the Riparian Areas Administered by the Las Cruces Field Office

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Apache Box	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. AMP completed. Excluded from livestock grazing.	Acquire private land to consolidate holdings.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2001.
Bear Creek	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Build additional fences in fiscal year 2000. Excluded from livestock grazing.	Build fences and exclude grazing in 2000.	Photopoints each year starting in 2001. PFC survey every 2 years starting in 2001. Aquatic survey every 2 years starting in 2001.
Blue Creek, Segment 1	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral sales.	Explore options for riparian enhancements.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005.
Blue Creek, Segment 2	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	Explore options for riparian enhancements.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005. Southwestern willow flycatcher survey each year starting in 2001.
Gila Lower Box, Upstream of Gap Fence	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Limited livestock use.	Conduct a macro-invertebrate survey. Annually re-evaluate effects of livestock use.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005. Southwestern willow flycatcher survey each year starting in 2001. Aquatic survey each year starting in 2001.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Gila Lower Box, Nichols Area	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock excluded from fenced portion of river bottom.	Maintain gap fence. Conduct a macro-invertebrate survey.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005. South-western willow flycatcher survey each year starting in 2001. Aquatic survey each year starting in 2001.
Gila Lower Box, The Box	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock excluded from fenced portion of river bottom. Acquire private land.	Maintain gap fence. Conduct a macro-invertebrate survey.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005. South-western willow flycatcher survey each year starting in 2001. Aquatic survey each year starting in 2001.
Gila Lower Box, Down-stream of the Box	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	In 2000 and 2001, build fences to exclude domestic livestock grazing on riparian public land.	Photopoints each year starting in 2001. PFC survey every 2 years starting in 2003. Aquatic survey each year starting in 2001. Annual southwestern willow flycatcher survey when habitat develops.
Gila Middle Box	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. No grazing. No recreational boating.	Conduct a macro-invertebrate survey in 2003.	PFC survey every 5 years starting in 2005. Aquatic survey each year starting in 2001.
Owl Canyon	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing excluded.	Maintain fences. Acquire legal public access.	PFC survey every 5 years starting in 2002.
Frying Pan Spring	Retain public lands. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is limited by topography.	Develop AMP. Build an exclosure to protect the spring.	PFC survey every 5 years starting in 2001.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Moonshine Spring	Retain public lands. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is limited by topography.	Develop an AMP. Build an exclosure to protect the spring.	PFC survey every 5 years starting in 2001.
Riley Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is limited by topography.	Develop an AMP. Determine riparian characteristics and functionality. Manage for PFC if there are riparian values.	PFC survey every 5 years starting in 2001.
Cowboy Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	Develop an AMP. Determine riparian characteristics and functionality. Manage for PFC if there are riparian values.	PFC survey in 2001 and at 5-year intervals if riparian values are found.
Elephant Butte Canyon	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	Develop an AMP. Determine riparian characteristics and functionality. Manage for PFC if there are riparian values.	PFC survey in 2001 and at 5-year intervals if riparian values are found.
Lawhorn Canyon	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	Develop an AMP. Determine riparian characteristics and functionality. Manage for PFC if there are riparian values.	PFC survey in 2001 and at 5-year intervals if riparian values are found.
Indian Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is limited by topography.	In 2002, install a float valve in the trough to prevent overflow.	PFC survey every 5 years starting in 2003.
Byer Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	In 2003, build an exclosure to protect the spring and install a float valve in the trough to prevent overflow.	PFC survey in 2004 and every 5 years starting in 2005.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Burnt Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is limited by topography.	In 2002, install a float in the trough to prevent overflow.	PFC survey every 5 years starting in 2005.
Grapevine Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	NCP[a]	NCS[b]
Spring Canyon Seep	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is prevented by topography.	NCP	NCS
Upper May Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Livestock grazing is prevented by topography.	Determine riparian conditions and characteristics. Manage for PFC if riparian conditions exist.	NCS
South Canyon Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales.	Determine riparian characteristics and functionality. Manage for PFC if there are riparian values.	NCS
Achenbach Canyon	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	Determine functionality and feasibility of management for riparian values, if present.	PFC survey in 2001and at 5-year intervals if riparian values are found.
Cleophus Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain exclosure.	Photopoints each year starting in 2005. PFC survey every 5 years starting in 2005.
Aguirre Spring	Retain public lands. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Build fence to protect the spring from recreational visitors. Evaluate in 2002 to determine need for new management strategy.	PFC survey every 5 years starting in 2005.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Cox Development 1	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	In 2002, determine functionality and feasibility of management for riparian values, if present.	NCS
Cox Development 2 (Baylor Spring)	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded form domestic livestock grazing.	In 2002, determine functioning conditions.	NCS
CRMP-W-20	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	In 2001, determine functionality and feasibility of management for riparian values, if present.	NCS
Telles Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	In 2003, evaluate feasibility of exclosure or other actions to protect the spring and related cultural values.	PFC survey every 5 years starting in 2005.
Middle Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain exclosure fence.	PFC survey every 5 years starting in 2003.
Mine House Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	Determine functionality and feasibility of management for riparian values, if present.	NCS
LaPointe Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain the fence.	Photopoints each year starting in 2001. PFC survey every 5 years starting in 2005.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Indian Hollow	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Livestock grazing occurs.	Monitor annually to determine if management is required.	PFC survey each year starting in 2001.
Sotol Creek	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales.	Determine functionality and feasibility of management for riparian values, if present.	PFC survey in 2002 and at 5-year intervals if riparian values are found.
Fillmore Canyon	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Move Dripping Springs fence to include Fillmore Canyon. Maintain the fence regularly.	PFC survey every 5 years starting in 2003.
Ice Canyon	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from domestic livestock grazing.	Determine functioning conditions in 2003.	NCS
Dripping Springs	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Determine functionality.	PFC survey every 5 years starting in 2001.
North Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain fences annually.	PFC survey every 5 years starting in 2003.
Middle Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain fences annually.	PFC survey every 5 years starting in 2003.

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Little Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain fences annually.	PFC survey every 5 years starting in 2003.
Goat Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Fence out all riparian areas to exclude them from livestock grazing.	PFC survey every 5 years starting in 2003.
South Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain exclosure annually.	PFC survey every 5 years starting in 2002.
Hackler Spring	Retain public land. Closed to vehicles. Closed to mineral entry. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain exclosure annually.	PFC survey every 5 years starting in 2003.
Hole in the Wall	Currently grazed by livestock.	In 2003, build an exclosure around the spring and a pipeline from the spring to a trough for livestock.	Photopoints each year starting in 2003. PFC survey every 5 years starting in 2005.
Bobcat Spring	Currently grazed by livestock.	In 2003, build an exclosure around the spring and a pipeline from the spring to a trough for livestock.	Photopoints each year starting in 2003. PFC survey every 5 years starting in 2005.
Russel Mine Spring	Currently grazed by livestock.	By 2002, determine potential for riparian development and manage accordingly.	NCS

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
Livermore Spring	Currently grazed by livestock.	In 2003, build an exclosure around the spring and install a flow valve on trough to prevent dewatering.	Photopoints each year starting in 2003. PFC survey every 5 years starting in 2005.
Box Canyon	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Lightly grazed by livestock.	In 2005, evaluate the potential for riparian projects and implement actions based on the evaluation.	PFC survey every 5 years starting in 2005.
Nichols Spring	Retain public land. Closed to vehicles. Closed to mineral leasing. Closed to mineral sales. Excluded from livestock grazing.	Maintain the exclosure.	PFC survey every 5 years starting in 2005.
Rockhouse Spring	Currently grazed.	In 2002, determine the potential/feasibility of implementing management actions to attain PFC.	PFC survey every 5 years starting in 2005.
Lordsburg Playa	Retain public land. Closed to vehicles. Closed mineral leasing. Closed to mineral sales. AMP in place.	In 2005, implement a study to determine how playa lakes function in the desert and develop a management plan that ensures the development and maintenance of natural vegetation.	NCS
Isaack Lake	Retain public land. Closed to vehicles. Closed mineral leasing. Closed to mineral sales.	In 2005, implement a study to determine how playa lakes function in the desert and develop a management plan that ensures the development and maintenance of natural vegetation.	NCS

TABLE 3.1 (Cont.)

Riparian Area	Current Management Practices and Activities	Planned Management Practices and Activities	Scheduled Monitoring Actions
San Luis Lake	Retain public land. Closed to vehicles. Closed mineral leasing. Closed to mineral sales.	In 2005, implement a study to determine how playa lakes function in the desert and develop a management plan that ensures the development and maintenance of natural vegetation.	NCS

[a] NCP = no currently planned future management practices and activities.

[b] NCS = no currently scheduled future monitoring actions.

Develop AMP: AMPs specifically address the resource management actions associated with domestic livestock grazing and can be used to prescribe livestock grazing management actions to protect riparian areas

Build Fences: The construction and maintenance of fences or other physical barriers are to protect riparian areas from unauthorized use by domestic livestock or inappropriate human activity, for example, vehicle use.

Protect Springs: One or more specific management actions are to protect the riparian area associated with springs and seeps from use of the springwater by domestic livestock or from adjacent human activity. Examples of management actions that are tailored to individual springs on a case-by-case basis include fencing of the riparian area around the spring; diversion of some or all of the water flowing from the spring through a pipe to a remote watering trough; installation of a float valve at the watering trough to prevent overflow and to allow water to flow to the riparian area; and actions such as revegetation or fencing to prevent siltation of the spring from adjacent activities such as trampling by livestock or humans.

Exclude Livestock: Domestic livestock are prevented from using the riparian area by implementing one or more management actions such as grazing allotment modification or installation of fences or other physical barriers.

In addition to the policy actions that provide guidance on planned actions in the Las Cruces Field Office, the following monitoring activities will be conducted on a periodic basis (see Table 3.1 for monitoring schedule).

Photopoints: Photographic documentation of the physical condition of the riparian area will be taken at the same locations. The purpose is to help determine the extent to which the riparian area is responding to management actions designed to improve its functioning condition. An entry indicates the year of the next photo documentation, followed by the return interval for subsequent photography.

PFC: A field survey will be conducted to determine the extent to which the riparian area

is in PFC in accordance with BLM guidelines. An entry indicates the year of the next PFC survey, followed by the return interval for subsequent surveys.

Macroinvertebrate Survey. Qualitative sampling of the macroinvertebrates (e.g., aquatic insects) of the streams adjacent to the lotic riparian areas will be performed. The purpose is to help determine the habitat and water quality conditions of the streams.

3.5 PROGRESS REPORTING

As the management actions indicated in Table 3.1 for each riparian area are prescribed, implemented, and evaluated, documentation will be accomplished using BLM Form 6780-2, Habitat Management Plan Progress Report (Figure 3.1) (BLM 1981).

Illustration 4
Form 6780-2
(.31If3)

6780 - HABITAT MANAGEMENT PLANS

Habitat Management Plan Progress Report

Form 6780-2
(July 1981)
(Formerly 6620-3)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HABITAT MANAGEMENT PLAN PROGRESS REPORT

OBJECTIVES	DATE COMPLETED	PLANNED ACTIONS	DATE COMPLETED	EVALUATION MONITORING	DATE COMPLETED

INSTRUCTIONS

1. List specific HMP objectives as developed from RMP/MFP planning documents or as otherwise approved.
2. List specific planned actions to be initiated to meet each specific objective.
3. List scheduled evaluation monitoring study(s) planned to evaluate accomplishments.
4. Enter completion date for each objective, action, or evaluation/monitoring study as accomplished.

FIGURE 3.1 BLM Form 6780-2: Habitat Management Plan Progress Report (Source: adapted from BLM 1981)

4 COORDINATION WITH OTHER BLM PROGRAMS, OTHER AGENCIES AND ORGANIZATIONS, AND THE PUBLIC

The BLM traditionally implements riparian habitat program management through coordination with other resource management programs; for example, by modifying domestic livestock grazing practices or limiting mineral development activities in or adjacent to riparian areas. Not only will this type of coordination continue, but this HMP places special emphasis and priority on improving and protecting riparian areas by identifying management actions that may be implemented separately from other programs. Such actions may include conducting scientific studies and analyses, manipulating vegetation composition, and installing bank stabilization facilities to accomplish specific riparian management objectives. Close coordination with other BLM programs in implementing these actions is critical to ensuring their success and to maximizing their effectiveness.

This HMP was developed with the assistance of an interdisciplinary team of BLM resource program specialists to begin the necessary coordination process. It is important that this coordination within BLM continue as implementation of the HMP proceeds.

Organizations external to BLM that were consulted during preparation of the HMP include the USFWS and the NMDG&F. In addition, other organizations that were informed or contacted during preparation of the HMP included the New Mexico Congressional delegation, the Governor's Office, county government offices, other state and federal agencies, state academic institutions, and several non-government organizations. A complete list of all organizations involved is contained in the *DEIS for Riparian and Aquatic Habitat Management in the Las Cruces Field Office – New Mexico* (BLM 1999). In addition, the general public was invited to review and comment on the DEIS, and the results of that involvement are documented in Section 1 of the Final EIS (FEIS).

5 WILDLIFE ECONOMICS

The goal of riparian-wetland area management described in this HMP is to maintain, restore, improve, protect, and expand the riparian habitats in the Las Cruces Field Office so that they are in PFC for their productivity, biological diversity, and sustainability. When riparian-wetland areas are functioning properly, they exhibit healthy characteristics that contribute positively to the sustainability of natural systems. The benefits of these contributions include the following:

- Purifying water by removing contaminants;
- Reducing the risk of flooding and associated damage;
- Reducing stream channel and stream bank erosion;
- Increasing available water and stream flow duration by holding water in stream banks and aquifers;
- Supporting a diversity of plant and wildlife species, including endangered species; and
- Maintaining habitat for healthy fish populations, including endangered species.

In its 1997 *Public Records from Public Lands* document (BLM 1997b), the BLM states that:

> While commodity-related activities on the public lands generate economic benefits, so too does the conservation of public land resources. *Money Magazine*'s annual survey of the best places to live in the U.S. routinely ranks such criteria as clean water and clean air high on the list, along with proximity to lakes, mountains, and rivers. Drawn by these environmental values, many of which are associated with the public lands, companies and individuals are moving to the West.

The DEIS for Riparian and Aquatic Habitat Management in the Las Cruces Field Office – New Mexico (BLM 1999) analyzed three alternatives for improving and protecting the riparian habitats included in this HMP. On the basis of this analysis, the Current Management Alternative was determined to be the most effective approach for realizing the benefits of riparian habitat management. Therefore, current management is the basis for the riparian and aquatic habitat management strategies prescribed in this HMP.

6 PUBLIC AFFAIRS

The following actions have been or will be taken to facilitate public awareness of the Las Cruces Riparian and Aquatic HMP:

- Notice of Intent to prepare the Las Cruces Riparian and Aquatic Habitat Management Environmental Impact Statement (EIS) was published in the *Federal Register* on October 30, 1998.

- Public scoping meetings were held in Lordsburg, New Mexico, November 17, 1998, and in Las Cruces, New Mexico, November 18, 1998.

- Copies of the scoping summary reports were mailed February 1, 1999, to everyone who expressed an interest in receiving them.

- Information about the riparian and aquatic habitat management planning process was posted at www.nm.blm.gov in March 1999.

- Copies of the *DEIS for Riparian and Aquatic Habitat Management in the Las Cruces Field Office – New Mexico* were mailed October 8, 1999, to everyone who expressed an interest in receiving them.

- Public Hearings were held in Lordsburg, New Mexico, November 22, 1999, and in Las Cruces, New Mexico, November 23, 1999.

- Copies of the FEIS and the HMP were mailed by October 2000 to everyone who expressed an interest in receiving them.

- A news release was issued in October 2000 to announce completion of the Las Cruces Riparian and Aquatic HMP.

- The New Mexico BLM Web site regarding the status of the Las Cruces Aquatic and Riparian HMP was updated in October 2000.

- A Presentation Kit for use in fiscal year 2001 and beyond was prepared to describe the significance of riparian habitat and what the BLM is doing to improve and protect it in the Las Cruces Field Office.

7 COSTS AND FUNDING NEEDS

Table 3.1 identifies the management actions and monitoring actions currently underway and planned for improving and protecting all of the identified riparian areas in the Las Cruces Field Office. These actions are the basis for defining more specifically the work required for accomplishing the necessary improvement and protection of each area. As the work elements identified in Table 3.1 are defined site specifically for projects in each riparian area, cost estimates will be developed for use in budget formulation and justification. However, that level of project specificity and detail is not included in this HMP.

8 CONCURRENCE AND RECOMMENDED APPROVAL

This Proposed Habitat Management Plan has been prepared, reviewed, and approved by the undersigned parties.

Prepared by:

William Merhege — 6/14/00

Bureau of Land Management
Las Cruces Field Office — Date

Approved by:

6/19/00

Field Office Manager — Date
Bureau of Land Management
Las Cruces Field Office

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USFWS: See U.S. Fish and Wildlife Service.

GLOSSARY

Allotment: An area of land designated and managed for grazing of livestock.

Allotment Management Plan (AMP): An activity plan that applies to livestock grazing on public lands, which is prepared in consultation, cooperation, and coordination with the permittee(s), lessee(s), or other involved affected interest(s).

Animal Unit Month (AUM): The amount of forage necessary to sustain one cow and one calf or their equivalent (e.g., five sheep or goats) for one month.

Area of Critical Environmental Concern (ACEC): An area established through the planning process, as provided in the Federal Land Policy and Management Act, where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and afford safety from natural hazards.

Big Game: Larger species of wildlife that are hunted, such as elk, deer, bighorn sheep, and pronghorn antelope.

Biota or Biotic: Living components of an ecosystem (e.g., plants and animals).

Browse: As noun: That part of the leaf, twig, fruit growth of shrubs, woody vines, and trees that is available for animal consumption. As verb: To consume browse.

Candidate Species: Species identified by the U.S. Fish and Wildlife Service as appropriate for listing as threatened or endangered.

Contiguous: In close proximity, neighboring, adjoining, near in succession, in actual close contact, touching at a point or along a boundary, bounded or traversed by.

Cultural Resources: Fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, work of art, architecture, and natural features important in human events.

Diversity: The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Ecosystem: A complex, self-sustaining natural system that includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

Endangered Species: Any species in danger of extinction throughout all or a significant portion of its range.

Endemic: Peculiar to or found only in a particular locality (e.g., endemic plants are common in a locality but not elsewhere).

Environmental Impact Statement (EIS). A document that is prepared to analyze the impacts of a proposed project or action on the environment and is released to the public for comment and review. An EIS must meet the requirements of the National Environmental Policy Act and the Council on Environmental Quality and the directives of the agency responsible for the proposed project or action.

Federal Land Policy and Management Act of 1976 (FLPMA). Public Law 94-579, signed by the President on October 21, 1976. It establishes public land policy for the management of lands administered by the U.S. Bureau of Land Management (BLM). It specifies several key directions for the BLM, notably (1) management

on the basis of multiple use and sustained yield; (2) preparation of land use plans to guide management actions; (3) public land management for the protection, development, and enhancement of resources; (4) public land retention in federal ownership; and (5) incorporation of public participation in reaching management decisions.

Field Office: The smallest administrative subdivision of the U.S. Bureau of Land Management (formerly called Resource Area).

Forage: All browse and herbaceous foods that are available to grazing animals.

Forb: Any herbaceous nonwoody plant that is not a grass or grasslike plant.

Fuelwood: Firewood, wood for fuel.

Habitat: A specific set of physical conditions that surround a single species, group of species, or large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Habitat Management Plan (HMP): A written and officially approved plan for a specific geographical area of public land that identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

Impact: The effect, influence, alteration, or imprint on the natural or human environment caused by an action.

Leasable Minerals: Those minerals or material designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium and sodium minerals, and oil and gas.

Lentic: Standing water riparian habitats, such as lakes, ponds, or playas.

Lotic: Moving water riparian habitats, such as rivers, creeks, or springs.

Monitoring: Orderly process of collecting, analyzing, and interpreting resource data to evaluate progress toward meeting management objectives.

Multiple Use: A combination of balanced and diverse resource uses that considers long-term needs or renewable and nonrenewable resources, including recreation, rangeland, timber, minerals, watersheds, and wildlife, along with scenic, scientific, and cultural values.

Public Land: Any land or interest in land (outside of Alaska) whose surface and/or subsurface is owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management.

Rangeland: Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grasslike plants, forbs, or shrubs.

Raptor: Bird of prey with sharp talons and strongly curved beak (e.g., hawk, owl, vulture, eagle).

Research Natural Area: An area that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics: (1) a typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil, or water features; or (5) outstanding or unusual geologic, soil, or water features.

Resource Management Plan (RMP): A land use plan that establishes land use allocations, multiple-use guidelines, and management objectives for a given planning area. The RMP planning system has been used by the U.S. Bureau of Land Management since 1980.

Riparian Area: A unique form of wetland that represents the transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with rivers and streams, glacial potholes, and shores of lakes and reservoirs with stable water levels are typical riparian areas.

State-Listed Species: Biota listed by the State of New Mexico as threatened or endangered (animals) or as sensitive or endangered (plants).

Stream: General term for a body of water flowing in a natural channel, as distinct from a constructed channel such as a canal or irrigation ditch. Streams in natural channels and point sources, such as springs and seeps, are classified as either being perennial, intermittent, or ephemeral. These water regimes are defined as follows:

- *Perennial* — A stream or water point source in which there is an uninterrupted surface or subsurface flow of water. Perennial waters are directly associated with a water table in the localities through which they flow. These areas generally maintain a vigorous presence, or high potential for riparian vegetation.

- *Intermittent (= Semiperennial/ Semiephemeral)* — A stream or water point source in which the flow of surface or subsurface water is regularly interrupted for a period of days to months. Semiperennial sources have shorter periods of interruption, days to weeks, and semiephemeral sources have no-flow periods of weeks to months. These areas maintain a variable amount of riparian vegetation. The vegetation may become restricted to very limited and discontinuous areas. These areas are generally more sensitive to disturbance and excessive use.

- *Ephemeral* — A stream or water point source that flows only in direct response to precipitation. The channel or point of exit is permanently above the local water table. These areas generally cannot, nor do they have the potential to, maintain riparian vegetation.

Vegetation Manipulation: Planned alteration of vegetation communities through use of prescribed fire, plowing, herbicide spraying, or other means to gain desired changes in forage availability or wildlife cover.

Vegetation Treatments: Methods used to control the growth and spread of undesirable vegetation. Control can be by chemical or mechanical means or by fire.

Watershed: The total area above a given point on a waterway that contributes runoff water to the stream flow at that point.

Wetland: Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support and that, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wilderness Study Area (WSA): An area determined to have wilderness characteristics. Wilderness study areas are subject to interdisciplinary analysis through the U.S. Bureau of Land Management's land use planning system and public comment to determine their wilderness suitability. Suitable areas are recommended to the President and Congress for designation as wilderness.

Wildlife: All species of mammals, birds, invertebrates, amphibians, reptiles, or their progeny or eggs that, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.